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## JOURNAL

# PHILOSOPHY



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## THE JOURNAL OF PHILOSOPHY

CONCERNING THE PHILOSOPHICAL CONSEQUENCES OF THE THEORY OF RELATIVITY 1

THE theory of relativity has made it necessary to reject conceptions which have been taken for granted in science and philosophy since the time of the Greeks. An understanding of the reasons for the introduction of these rejected concepts is necessary if we are to determine the consequences of this theory. This forces us to examine Greek thought.

Greek science was characterized by three major movements, one in Pre-Socratic philosophy, the second in mathematics and astronomy, and the third in medicine and biology.

It was in the first of these three movements that the conceptions which relativity physics has altered, were first laid down. The Miletians and Heraclitos had emphasized the two extensive facts of stuff and change, and thereby forced science to reckon with them in its theory. Then Parmenides proceeded to specify what these two facts involve. He noted that change entails either generation or motion, and that the fact of stuff justifies not only the principle that the real is physical, but also the principle that the real is being, where being means that the real does not change its properties. It was then easy for him to prove that the fact of stuff is incompatible with the fact of change if nothing but stuff, conceived either as one substance or many microscopic particles, exists.

The proof is quite simple and inescapable. Change can not be due to generation, for that contradicts the hypothesis that the real is being. Moreover, it can not be due to motion, for motion involves the transition of stuff from where it is to where it is not, and there can be no "where-it-is-not" if nothing but stuff exists. Nor can change be due to the motion of many particles—for two reasons. First, the motion of many particles calls for a referent other than them, as much as the motion of one. A difficulty is not met by multiplying it many times. Secondly, there can not be many particles if nothing but the stuff of the particles exists. For manyness calls for something to divide one part of stuff from another, and the

<sup>1</sup> Read before the Joint Session of the Eastern and Western Divisions of the American Philosophical Association in Columbia University on Dec. 31, 1929; and based in part upon the Deems Lectures, delivered in New York University in May, 1929, which are to appear in a forthcoming book entitled Science and First Principles.

is impossible if nothing but the stuff to be divided exists. The essential point in the latter argument is not so much the need for an intervening medium, as the need of a basis for the distinction between one particle and another. In an atomic theory which regards the atoms as possessing the same intrinsic properties, the category of stuff gives only the respect in which the atoms are identical or one; it can not prescribe the respect in which they are numerically different or many. Stated positively this means that one atom can be distinguished from another only in terms of its relation to some common referent. If nothing but the stuff of the microscopic atoms exists there can be no such referent. Hence atomism is impossible.

It is to be noted that this argument takes care of those who would attempt to define atomic motion in terms of the relations of the microscopic atoms to each other. Before there can be even relative motion there must be many atoms, and the manyness, to say nothing about the motion, is meaningless unless there is a common referent other than those atoms.

Heraclitos and Parmenides attempted to escape this contradiction between the two extensive facts of stuff and change by denying one of the facts. When observation revealed that these obvious extensive facts can not be dismissed in this facile fashion there was nothing for those who followed Parmenides to do but to conclude that some referent in addition to the microscopic particles exists. When this referent was identified with the spacial characteristics of nature the doctrine of absolute space came into scientific theory, and the physical theory of nature was put in the form which it has maintained down through modern times.

It has been supposed that this placed the physical theory of nature upon sound foundations. Zeno proved that this is not the case. He showed that if the referent for motion is continuous space, then the movement of a body through a finite distance in a finite time is an impossibility. The proof is simple and valid. In a continuous space there are an infinite number of points in any finite distance. To move through a finite distance means, therefore, if motion is in space, that a body must pass from one point to another an infinite number of times. This is impossible in a finite period of time. Obviously, the Greeks should have concluded that a referent other than the microscopic particles exists and that this referent is rot absolute space. Instead, science took over the physical theory as Leucippos stated it.

Meanwhile two other developments were taking place in Greek science. The first occurred in the sciences of mathematics and astronomy. An accumulation of empirical rules of measuring finally fell into systematic form with the deductive geometry of

Euclid, as the accumulations of astronomical observations finally gave rise to the deductive mathematical astronomy of Eudoxus and Also an analysis of number theory went forward Hipparchos. under the direction of Pythagoras, Theaetetos, and Plato. Investigations in music had led Pythagoras to suggest that the real is This conclusion received an apparently final conmathematical. firmation when the principles of the astronomical theory of Eudoxos These principles, which referred to the foundations were examined. of the astronomical universe, said not one word about physical objects. Instead, they revealed objective nature to be a system of perfeet geometric forms which only reason can grasp. In this fashion the inorganic science of the Greek world, unlike that of the modern world, drove men to the conclusion that the real is rational, where rational means being constituted of mathematical forms, or, as Plato said, "objective ideas." Since mathematical or logical forms are exhausted in their meanings, and such meanings are eternal, changeless things, it follows that the principle of being holds for this as well as the physical theory of nature. We shall henceforth refer to this philosophy of science as the mathematical theory of nature.

It was natural that this outcome of Greek inorganic science should be foreseen and given articulate expression before it was completely realized in the astronomy of Eudoxos. It happens that the man who was responsible for this was a mathematician named Plato, and that the title which this theory has born in history is Platonism.

The third movement in Greek science occurred in medicine and biology. Hippocrates of Cos, Empedocles, and Aristotle were its outstanding figures. Hippocrates noted the two facts of mechanical causation and organization. Empedocles applied the atomic theory to the living thing and discovered the principles of struggle for existence and survival of the fittest. However, the physical theory of nature was doomed to failure in Greek science because it could not apply its atomic principles to specific local objects and processes. Hence, when Aristotle came upon the two facts of organization and generation he had no alternative but to regard them as ultimate and This necessitated that he accept the principle of beirreducible. coming and the doctrine that both matter and form are causes. biological science drove Aristotle to an entirely new philosophy: the first thorough-going scientific philosophy to rest upon the principle of becoming. We shall refer to this conception as the functional theory of nature.

It is to be noted that the systems of Leucippos, Plato, and Afstotle are not the product of a single movement in speculative thought, but instead, are the outcome of three distinct movements in science. The philosophical character of Greek science owes its existence to

this fact. When science failed to converge upon a single theory of its first principles the consideration of such fundamental matters could not be ignored, and, hence, philosophy was inevitable.

Consider the issue to which these three developments gave rise. The functional theory is distinguished from the other two theories because it rests on the principle of becoming. Both the physical and the mathematical theories accept the principle of being. They differ in their conception of what being is; the former theory holding that it is physical stuff, the latter that it is mathematical or logical form. An examination of their conceptions of causation reveals, however, that these three different theories have something in common. They are three answers, and since they exhaust the logical possibilities, they are the only possible answers to one fundamental problem: the problem of matter and form, or of the relation between things and their relations. The physical theory would solve this problem by regarding all relations except spacial ones as effects of the properties and motion of material causes; the mathematical theory, with the thesis that only relations are causes; and the functional theory, with the contention that both matter and form are causes.

It was the great achievement of Greek science to discover this fundamental problem of its science and philosophy, to give the only possible answers to it, and to carry each one of these answers to its logical consequences. Furthermore, unless science passes to a more fundamental issue, which is impossible until it discovers more elemental concepts than entity and relation, it follows that the philosophy of Western science can be nothing more or less than the story of the fate of these three theories before historical circumstances and new empirical evidence. It is because of the new light which it has thrown upon this fundamental issue that the theory of relativity is of such great philosophical importance.

A consideration of the history of science from the Greeks to our own day will make this clear. Time does not permit an account of reasons. It is sufficient to note that following the Greek period the mathematical theory came into the ascendency; that with Thomas Aquinas the Aristotelian or functional theory began to dominate Western thought; and that in the seventeenth century, with the discoveries of Galilei, and the generalization of those discoveries by Newton, the physical theory of nature became the dominant philosophy of the Western world. Notwithstanding the criticisms of philosophyrs, such as Berkeley and Mach, it has dominated scientific and popular thought up to the present moment.

Although it was not evident upon the surface, the mechanics of Galilei and Newton implied the kinetic atomic theory. For this new

mechanics accepted the principle that the real is physical, i.e., it conceived of nature as a system of masses and forces. Also, it was a mechanical theory. Now, the doctrine of mechanical causation is not valid unless the causes of natural phenomena do not change their properties.<sup>2</sup> Hence, the Newtonian philosophy accepted the principle that the real is being, as well as the principle that the real is physical. These two principles can be reconciled with the fact of motion, which was the major theme of this mechanics, only by accepting the kinetic atomic theory. This aspect came out explicitly in LaPlace's Statement of Newton's laws of motion. Traditional modern science rested upon the physical theory of the Greeks in another respect. It regarded matter as moving in absolute space.

However, there were respects in which Galilei and Newton improved upon the physical theory of the Greeks. Galilei stated it in terms of the near at hand. This was the essential contribution made by the new science which Galilei termed "the science of local motion." In this discovery the uniqueness of modern thought and the modern world consists. The physical theory of nature was stated in terms of things which man could take hold of and move about. were discovered, in the behavior of a ball let fall from one's hand to the ground, which applied to the pendulum and the projectile. made experimental science important and rendered inevitable the control of commonplace practice by the most abstract of scientific theory which characterizes our contemporary life. And when Newton demonstrated that the ideas discovered by Galilei in a crude local object within man's grasp, condition the stability and motions of the astronomical universe, the revolution in the thought of intelligent men was complete. Physical categories here in the local part of this world were revealed to be the key to any other world which might exist. A shift of interest from other worlds to this one was inevitable.

This statement of the physical theory of nature in terms of local factors introduced a new element into science. Measurements and quantitatively exact deductions were possible. But these measurements brought with them a certain amount of relativity. For measurements call not merely for clocks and rods, but also for coordinate systems which are attached to molar bodies. Thus all measurements carry with them this dependence upon a particular reference body. Galilei noted, however, that there is no experimental means of telling which reference body has priority, providing one ignores accelerated motion. This enabled traditional modern science to state its laws in a form which was independent of any particular uniformly moving body to which one referred one's meas-

<sup>&</sup>lt;sup>2</sup> See this Journal, Vol. XXV, pp. 428 ff.

urements. This equivalence of all uniformly moving bodies for the measurement of spatial and temporal values is known as the principle of relativity for Galileian frames of reference. It appeared as a corollary to Newton's laws of motion. Newtonian mechanics held only for observations referred to such frames. One may well ask what the laws of nature have to do with the reference frame which a scientist chooses. The laws of nature should be independent of any such choice. Only the general theory of relativity has removed this inadequacy. It may be said, therefore, that the latter theory has taken us nearer to that which is absolute in nature.

It is to be emphasized, however, that all modern scientific theories do not depend upon an approach to nature through coördinate systems with their accompanying rod and pointer readings. The kinetic theories of heat and gases are cases in point. In these theories the atoms are regarded as moving without any regard to a particular coördinate system. This must not be overlooked when one considers the philosophical consequences of current physical conceptions. The theory of relativity is not the only type of accepted and verified scientific theory. The evidence for the kinetic atomic theory is greater in amount and less subject to question.

As the evidence in the different sciences accumulated, the modern physical theory of nature was forced to complicate its doctrine. Galilei's discovery of the importance of acceleration made it necessary to add time as well as space as an absolute. Gravitation came in as another absolute, with the generalization of Galilei's ideas by Newton. And with the acceptance of the wave theory of light and Faraday's conception of electricity and magnetism, an absolute ether was introduced.

Thus matters stood at the opening of this century. The physical theory of nature was intact. Independent lines of evidence had confirmed and reconfirmed the validity of the kinetic atomic theory. But its doctrine had become quite complicated with the addition of four absolutes: space, time, gravitation, and the ether.

Into this situation came the theory of relativity. With one stroke the special theory rejected absolute space, absolute time, and the absolute ether, to substitute another absolute, termed space-time; and with another master stroke the general theory removed absolute gravitation and absolute space-time to leave mechanics with nothing but matter and a certain equation which specifies how the changing metric of the heterogeneous space-time of any frame of reference is conditioned by the motion and distribution of matter.

Before considering the consequences of this theory, let us note two of its characteristics. Firstly, it is still a physical theory which approaches nature through local physical systems. This elemental as-

pect of the theory has been ignored or dismissed by many physicists and philosophers, but Einstein has emphasized it again and again. It is a theory about the relations between measurements made with rods and clocks, and referred to reference frames which are attached to molar bodies. Now rods and clocks and molar bodies are physical objects. It must be maintained therefore that the theory of relativity still stands in the Galileian and the Newtonian tradition. is a physical theory made applicable to specific bodies and processes. The relativity which it involves has nothing whatever to do with general philosophical relativity, or with human minds, or with perspectives; it is a relativity which can be spoken of only in connection with the dependence of measurements upon the molar objects to which these measurements are referred. Secondly, this theory does not make space-time absolute. In the general theory the structure of space-time changes. Certainly that which conditions the change is more fundamental than space-time. This conditioning factor is Thus Einstein says: "According to the general theory of relativity the metrical character of the four-dimensional space-time continuum is defined at every point by the matter at that point and the state of that matter." It is easy, therefore, to understand why Einstein regards his theory as a physical theory and refuses to accept the conclusions of Eddington and Whitehead.

Nevertheless, the theory of relativity has important philosophical consequences. Consider the effect of the special theory. It re-This confirms the contention of Zeno. moves absolute space. attempt to define motion and atomicity in terms of a relation to absolute space is invalid. This means that the physical theory of nature, notwithstanding the evidence for its validity, referred to above, is shaken to its very foundations. For it is left without any meaning for atomicity and motion.4 In such a condition it is helpless before the obvious fact of change. Of one thing we can be cer-Either a new referent must replace the discarded absolute space or the physical philosophy which has been at the foundation of modern science and the modern world must be completely re-In either event the consequences are most important for philosophy, as they are for every other branch of thought and action. This, I take it, is the general philosophical importance of the theory of relativity. It has brought the philosophical foundations of modern life and the modern world into question.

This consequence of the theory exhibits itself in a second difficulty which has arisen. We have noted how the general theory requires that the metrical structure of space be conditioned by the mo-

<sup>8</sup> Sitz. d. Pr. Akad. d. Wiss, 1917.

<sup>4</sup> See "The Problem of Motion," by F. P. Hoskyn, this JOURNAL, Vol. XXVI, pp. 337-346.

tion and distribution of matter. Professor Whitehead pointed out that it is very difficult to understand how measurement is possible

upon such a basis.5

The validity of this criticism can be made clear by an analysis of the measurement of astronomical distances. A rod can not be directly applied to such a distance. Its length can be determined only by establishing a relation of equality between it and some local distance to which a rod is directly applicable. This necessitates an appeal to geometrical principles. Moreover, these principles must hold for the intervening space which joins the two distances. If the metric of this intervening space varied with the redistribution of matter two difficulties would occur. Firstly, the geometrical principles to which we appealed at one time would not be those which we used at a later time. Were this the case values determined by an observation in one century would not combine with those made in another to make sense. In short, the values in question would be incommensurable. Secondly, it would be impossible to know what geometrical principles to use in a single given observation until one had determined the distribution of matter in the intervening space at the time. But one can not determine the distribution of matter without making astronomical measurements. Thus one finds oneself in the peculiar predicament of not being able to make a single astronomical measurement until one has made a large number of such measurements. The experience of astronomers does not confirm this consequence. It must be assumed, therefore, that at least an approximately uniform metric exists which extends over macroscopic distances.

To meet this difficulty and explain why we have not discovered metrical variability before, Einstein was forced to state his general theory in terms of nature as a whole and to assert that the metrical variability is a local microscopic irregularity within a general macroscopic uniformity. There are many reasons for believing that this is the case.

Many have supposed that this leaves the relativity doctrine of space in satisfactory form. Quite the contrary is the case. The difficulty to which Whitehead referred has been merely shifted into another form. Instead of having to ask why metrical variability is so rare we now have to inquire why metrical uniformity is so obvious. For if the metric of space is conditioned by matter, as the general the gry requires, it follows that exactly the reverse should be the case. Metrical variability should be the general rule and metrical uniformity the rare exception to it.

5 A. N. Whitehead, The Principles of Natural Knowledge, Cambridge, 1919, Ch. IV. The Principle of Relativity, Cambridge, 1922, Ch. III.

This becomes clear the moment one notes that a relational theory of space which would regard space as conditioned by matter must define the metric of space in terms of relations between physical objects; ultimately this means, in terms of relations between atomic In such a theory metrical uniformity exists when the relations between the atoms are constant, and metrical variability when they change. It is an essential and verified doctrine of the physical theory of nature that the atoms are in motion. This means that the relations between them are continuously changing and that metrical variability must be the general rule. Metrical uniformity should exist only over infinitely short increments of atomic motion. second law of thermo-dynamics and the modern doctrine that matter is indifferent to order or design is an expression of this same fact. It was precisely because of this incapacity of matter to produce a constant uniform relatedness that our predecessors were unable to refer the spacial characteristics of nature to matter.

The first serious attempt at a solution of this difficulty was made by Professor Whitehead. He concluded that the physical theory of nature must be rejected and that science must be reared upon a metaphysics which makes the principle of becoming fundamental, and admits a space-time relatedness which is not conditioned by matter. This modern edition of the functional theory of nature conceives of nature as a vast extensive process. It is by abstractions from this monistic process that our scientific concepts are derived. The first and least falsifying abstraction consists in the assignment of different parts of the "passage of nature" to different classes by means of the relation of simultaneity. The relativity of time arises from the fact that observed nature is too complex and ambiguous to insure that this assignment must always be made in the same way.

In each time system the complex of events exhibits two main factors: firstly, a certain constant uniform structure between its parts, termed space; and secondly, many adjectival permanences termed "sense objects," which are the content that appears within this structure.

Since there is a meaning for space only in a given time-system, a basis is proved for the relativity of space; and since the structure of space in a given time-system is constant and uniform and independent of the sense data and their "controls" which constitute molar objects, the uniformity and constancy necessary for measuring exists, notwithstanding the changing relations of objects. Thes, his theory provides a referent for molar motion in a given time system (but not, it is to be noted, for kinetic atomic motion which is independent of any time system) and a basis for measurement, while

6 The Concept of Nature, Cambridge, 1920, Ch. III ff; also see footnote 5.

also enabling us to accept the relativity of space and time which the special theory necessitates. This is the unique achievement of his

philosophy.

Consider this conflict between Einstein's and Whitehead's interpretation of the theory of relativity in the light of the history of Western science and civilization. In the Greek period three different theories of the first principles of science arose out of its empirical investigations to reveal the fundamental metaphysical problem of matter and form which is their common basis. In the succeeding centuries up to the present moment, each of these three theories had its chance to determine what man regarded as of first importance, and thereby to dictate what he did. The mathematical theory in a degenerate and Christianized form came first, the functional theory second, and the physical theory third and last. These periods of dominance correspond to the Dark Ages, the Scholastic Period, and the Modern Era, respectively. A comparison of the main characteristics of each age with its corresponding theory will reveal that the connection is not purely accidental. The mathematical theory can not make sense unless one deprecates the importance of the world of sensation. The Dark Ages with its neglect of empirical science and its other-worldly interests is such a philosophy in practice. functional theory insists that the real is contained in sensation. The Scholastic period is one in which an interest in nature for its own sake revives. The physical theory of modern science taught that masses and forces, understood and controlled by means of laws discovered by an experimental study of the near at hand, are the key to everything else. The modern era of technical science and theoretically controlled practice is the logical outcome of such a belief. Science and common sense have supposed that the answer of the modern world is decisive and final. But what do we now find? physical theory has been shaken to its very foundations. It stands without any theory of atomicity or motion and without an adequate theory of measuring. Furthermore, in raising within physics itself the vexing problem of the relation between matter and space-time which divides Einstein, Eddington, and Whitehead, it has brought us back again to the same old problem which the Greeks left. For what is space-time but a system of mathematical relations, and what is mathematical relatedness but the old form of Greek science and philosophy.

This throws an entirely new light upon the nature of the course of Western civilization and upon the degree of finality of modern thought. In fundamental matters we have not gone beyond the Greeks, for our problem in contemporary physics is the same old problem of matter and form which they first discovered and faced. Moreover, the three different answers which contemporary scientists have given to this problem are the same three theories which the Greeks proposed. Einstein would define space-time in terms of This is the physical theory of nature. Eddington would reverse the relationship. This is the mathematical theory. Whitehead would regard matter and space-time as abstractions from a monistic process of becoming. The identity of this with the functional theory has already been indicated. Moreover our discovery of the weakness in our traditional modern philosophy is not particularly original. It was pointed out in ancient times by Zeno. Notwithstanding all the evolution and revolution which moderns have emphasized, we have been simply adding our bit of information, and trying out our particular inadequate answer, to the same old prob-Man has yet to see a philosophical answer to this problem which is adequate. When it comes the result will be a civilization which combines the virtues of the Ancient, the Medieval, and the Modern. It is because the theory of relativity has cleared the way for this advance, by bringing the first principles of science into question, for but the third time in the history of the Western world, that it is of such great philosophical importance. Sooner or later the first principles of contemporary science will crystallize out of its present problems and rival interpretations. Unless we pass to a more fundamental issue, and no such passage seems in evidence or called for, our answer must be in terms of one of the three Greek theories. Anything else can mean only muddle-headedness and confusion. History indicates that the theory which gains dominant assent will determine the course of civilization for the next few centuries.

The more specific question now arises: What light does the theory of relativity throw upon the nature of the scientific philosophy which will gain this assent? All three theories have proved themselves inadequate in the past. The suggestion is that a revision in one of these theories is called for. In the time which remains I shall attempt to show that the facts call for an amendment to the traditional physical theory.

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This brings us back to the differences between Einstein and Whitehead over the nature of space and the foundations of measurement. I have indicated elsewhere why the mathematical theory of Eddington seems to me to be inadequate. The issue resolves itself, therefore, into a choice between the physical and the functional theories.

Notwithstanding its obvious merits the solution of the problem of

<sup>7&</sup>quot;Two Contradictions in Current Physical Theory and Their Resolution," Proc. of Nat'l Acad. of Sc., January, 1930.

measuring which Professor Whitehead offers comes at a terrific cost. It is necessary for him to reject the general theory of Einstein. This follows because the independence of matter from space-time which his theory entails, necessitates the rejection of the doctrine that the metric of space is conditioned by and varies with the distribution of matter. To reject this is to reject Einstein's law of motion and his tensor equation for gravitation. The reason for this solution by Whitehead can be appreciated. He preferred an adequate theory of measuring to a law for gravitation which made measurement impossible. If a choice is necessary at this point I believe it must be made in favor of Professor Whitehead, for a science of mechanics without the general theory is possible, but mechanics without measurement is nonsense.

But the experimental findings do not permit us to make a choice. The evidence for the general theory which Whitehead rejects is as good as, and has been questioned less than, that for the special theory upon which his own philosophy rests. Moreover, my colleague, Professor Schlesinger, informs me that recent astronomical observations have combined with previous ones to confirm the conclusion that a heterogeneous metric exists. What is needed is a theory which can admit the macroscopic metrical uniformity which measuring requires, and accept the doctrine that space is conditioned by matter also. We have shown that the traditional theory of matter can not do this. It follows, therefore, that our traditional theory of the capacity of matter to produce structure and order in nature is false, and must be amended to meet new evidence.

The question immediately arises concerning what this amendment must be. An examination of the metric of this universe with special reference to the theory of matter necessary to condition it should provide the answer. Measuring and the general theory indicate that it possesses the two characteristics which Einstein has suggested. An approximate uniformity and constancy extending over macroscopic distances is interspersed with local microscopic heterogeneity and variability.

The basis for the microscopic metrical variability is already at hand in the traditional atomic theory. For, if we mean, as we must in a physical and relativity theory, that space is a relation between the atoms and that metrical variability is a change in this relatedness, it follows from the kinetic properties of the microscopic particles that metrical variability must exist. It follows also that the material basis for the constant macroscopic metrical uniformity can not be found in the microscopic atoms. For, if their properties are such as to necessitate a variation in their interrelations, then relational constancy must have some other source.

We discover, therefore, that something other than the traditional microscopic atomic entities must exist in this universe. In fact, we have but to note what is required to impose a constant macroscopic metrical uniformity upon the local variable relatedness of the microscopic atoms to discover what this additional factor is.

First, it must be physical. Otherwise it would be necessary to reject the general theory and its doctrine that space is completely conditioned by matter. Also, if it is to cause the microscopic atoms to compensate their variable relatedness so that a constant uniformity extending over great distances in nature is preserved, it must change the direction of their motion. This calls for the presence of an external force which only a physical object can provide.

Secondly, this physical entity must congest and surround all the microscopic atoms of the whole of nature. Otherwise, they would be merely crowded out into some other referent for their motion and macroscopic metrical variability would be the rule.

Thirdly, this physical object must be an atom rather than a compound substance. Otherwise some referent other than it would be required to provide a meaning for the distinction between one of its parts and another and the old difficulty over atomicity would recur.

We have but to bring these different necessary attributes together to discover that this universe must be constituted not only of the moving microscopic atoms of the traditional atomic theory but also of one large macroscopic atom, spherical in shape and hollow in its interior except for its inner field, which surrounds and congests them.<sup>8</sup>

If one is asked to summarize the reason for accepting this theory the answer is that scientifically verified evidence and logical proof necessitate the following conclusions (1) that nature is kinetic atomic in character, (2) that atomism is impossible without a referent other than the microscopic particles, (3) that this referent can not be absolute space, (4) that a physically conditioned space-time metric exists, which exhibits a peculiar combination of metrical variability and uniformity; and that this is the only theory which seems capable of reconciling all these facts.

Note how it meets the difficulties. Since the shape of the macroscopic atom is different from that of the microscopic atoms, a meaning for the distinction between it and them is possible without recourse to an additional common referent. Thus a referent is provided for the atomicity and motion of the microscopic particles without involving oneself in a circular argument. This makes it possible to define the metric of space-time in terms of relations between

<sup>8&</sup>quot;The Macroscopic Atomic Theory," this JOURNAL, Vol. XXV, pp. 449-467.

physical objects without unsolving the problem of atomicity and motion.

Also, since the macroscopic atom introduces a fixed spherical form which surrounds and congests the microscopic atoms sufficiently to impose an approximately constant metrical uniformity, while not congesting them so much as to prevent their motion and the resultant variable relatedness, the peculiar combination of macroscopic metrical uniformity which measuring requires, and of microscopic metrical variability which the general theory necessitates, is made intelligible in strictly physical terms. Moreover, the different metrical properties are precisely where fact reveals them. Uniformity and constancy extend over the macroscopic distances of astronomical space, and variability is down in the regions of the microscopically small.

If one is asked to state the philosophical consequences of the theory of relativity in a few sentences, the reply, I believe, must run somewhat as follows. It has confirmed Zeno's contention that the atomic philosophers made a mistake when they introduced space as the referent for atomicity and motion, and has forced us to put the macroscopic atom in its place. From this, I believe, all the other physical 9 and philosophical 10 consequences of the theory can be derived. They are many in number and some are rather unexpected, but time does not permit a consideration of them here.

F. S. C. NORTHROP.

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#### BOOK REVIEWS

Studies in the Nature of Truth. University of California Publications in Philosophy, Volume II. Berkeley: University of California Press. 1929. Pp. 232.

Whether Pilate's famous phrase expressed an interest in the problem of truth, or, as Spengler argues, the contempt of a man of "destiny" for the whole range of truth, were Pilate to review the two volumes on truth in the University of California Publications in Philosophy he might well repeat his phrase in the Spenglerian manner, less, however, as a man of destiny than as a philosopher bewildered by the nuances and ramifications of the problem which here appear.

Like its predecessor, The Problem of Truth, the present volume of Studies in the Nature of Truth consists of a series of essays, in this case all by members of the staff of the University of California,

<sup>9</sup> See footnote 7.

<sup>10</sup> See footnote 8.

with the exception of an essay by Professor George H. Mead. The following papers make up the volumes: The Prepositional Nature of Truth, J. Loewenberg; Truths of Existence and of Meaning, George P. Adams; A Pragmatic Theory of Truth, George H. Mead; The Nature of Scientific Truth, V. F. Lenzen; The Nature of Truth in Transformation, D. S. Mackay; Truth and Perception, W. R. Dennes; Belief and Fact, Paul Marhenke; The Inaccessibility of Truth, D. W. Prall.

A reviewer can do little more than call attention to the significance of the volume, the freshness and directness of the analyses, and the high order of the essays, and then turn to an attempted synthesis of the contentions of the essays, realizing quite well that another reviewer would compose different variations on the same theme. To say that Professor Mead's paper is the richest in implications and Professor Dennes's paper is the most conclusive in the results attained, is undoubtedly to exhibit a personal bias, but the other papers, however excellent, seem to deal with preparatory or

less basic phases of the problem.

The volume ends and begins, with the essays of Professor Loewenberg and Professor Prall, on the theme of the inaccessibility of truth. Loewenberg upholds the view that truth is multi-prepositional: it is understood by mind, through assertions, in experience, and is about the real nature of things (p. 5). All these prepositions are regarded as equally important, so that the slighting of any is called the fallacy of suppressed prepositions. With the view that all four factors are present in truth, one must agree, but hardly with the view that all are equally important. The terminal proposition ("about") inevitably becomes of central importance, since falsity is as multi-prepositional as truth, and the distinction between truth and falsity can only lie in the relation of assertions to that which the assertions are about. In spite of the excellency of the analysis, Professor Loewenberg gives no satisfactory answer to what constitutes truth. His further view that the objective of truth is unattainable he regards as being derived from the prepositional nature of truth (p. 29), but it seems clear that it is derived instead from a metaphysical theory of the relation of experience to reality. one rejects this particular form of realism, he is not committed by accepting the multi-prepositional analysis to the view that truth is unattainable.

Professor Prall's attempt to show that truth is inaccessible proceeds differently. The claim is not the affirmation that no propositions are true, but rather that we never know if and when a proposition is true (pp. 201, 203). The method of procedure is to attack the certainty of both derivative and non-derivative judgments.

In regard to the former, it is held that immediate data are not knowledge, and that it is always possible to doubt the truth of a perceptual judgment (p. 219), as well as judgments about the past and future. However, if it is asserted that "x is between six feet and six feet three inches tall," it seems to me, as Dennes argues, that the verification can be such that the judgment can without qualification be called true. Prall says of such propositions that "they do not so much fail of truth as of meaning," since the height of a man is absolutely determinate (p. 216). It is hard to see how this supposed fact destroys the meaning of such propositions as are in question, nor why any greater degree of determinateness in the object than is intended or called for by the proposition is relevant to the truth-status of the proposition. As regards the truth of derived judgments, the argument shows that such deductions in part depend on non-derivative judgments, and in part gain a specious certainty by the use of definitions. In the course of the discussion, Prall states that "mathematics is a sort of knowledge which we are gradually realizing is not knowledge of the truth" (p. 221). Does or does not Professor Prall assert this proposition as true? To press this point, Professor Prall insists that his view does not lead to scepticism, but only to the realization that truth as inaccessible is not identical with success in action, and must be distinguished from knowledge, which is grounded faith. Is this proposition true, or only knowledge? Professor Prall modestly states that as a plain naturalism his view "claims no certain knowledge whatever" (p. 231). Now this claim is at least true, or else in fairness it must be admitted that neither the reviewer nor Professor Prall knows that Professor Prall wrote this essay, or that this essay truly expresses his view as to the inaccessibility of truth .

Professor Adams goes to an opposite extreme. He likewise distinguishes truth and knowledge, holding that truth supplies the reference to ideal elements which "express the theoretical interests and demands of the knowing subject" (p. 57). He insists that the presence of such ideal factors does not commit one to dualism and realism on the one hand or to positivism and humanism on the other, since it is possible to hold that there are objective meanings whose discovery is "dependent upon active processes of ideal construction and interpretation" (p. 58). Then the activity of mind is the means by which "the inexhaustible wealth of objective meanings native to existence can be known and disclosed" (p. 61). In this account, two matters may be mentioned. The truth of the Kantian position, as reiterated, for instance, by Lewis and in this volume by Lenzen and Adams, resides in the fact that without prior meanings by which questions are raised and predictions made, nature

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can answer no questions. Truth and knowledge only arise in an activity of mind which results in assertions by symbols about the referents of the symbols. It does not follow, however, as some idealists suppose, that the object which is known is therefore constituted by mind, since what does appear is not ever directly dependent upon an assertion as to what will appear. The ideal elements do not supply the content or referent, but only the significant assertion. Nor does it follow, as Adams supposes, and this leads to the second point, that the necessity of meanings in attaining truth requires that what is disclosed are objective meanings. There is a tendency, represented by Woodbridge and Dewey, as well as by idealists, to talk of objective meanings, but to me this confuses the real issues. Thus Professor Adams speaks of "the very meanings which the glacial markings themselves really own'' (p. 60). Undoubtedly glacial markings have objective connections with past and present events, but it is doubtful if the markings objectively mean the ice age without at least some reference to a potential situation in which the markings have become a symbol with meanings for some per-It seems less confusing to regard all meanings as ideal factors or events, realizing that this usage does not in any way restrict the degree of interrelatedness which objects exhibit.

It will be necessary to merely refer to the three articles by Lenzen, Marhenke, and Mackay. Lenzen's essay brings out the relation between convention and correspondence in the attainment of truth, insisting that pragmatic criteria operate in the choice of conventions, but not in the correspondence which is the test of truth (p. 109). Otherwise the essay is of more interest for the philosophy of science than it is in the exact determination of the nature of truth.

Marhenke's discussion introduces the question of the relation of belief to truth, his insistence being that the objective of a belief, by which I take him to mean a proposition, is only true or false in so far as it is asserted, assertion being an act of mind. But to the reviewer neither the relation of belief to the objective of belief, nor the relation of the objective of a belief to "fact," is adequately or completely dealt with. It is not clear that assertion always involves belief, nor how it is possible, if the objective of a belief is a proposition, for any constituent of the objective ever to be identical with a constituent of the fact.

Mackay's essay aims to show that truth must be regarded as a special case of those transformations which constitute reality. In particular, truth is "the property of an interaction between physical patterns of transformations in existence and logical patterns of transformation in meaning" (p. 127). Truth is "a constant pro-

portion among the variables selected for the purposes of a given problem" (p. 134). While there can be no doubt that truth involves an interaction of meaning and existence, it is doubtful if Professor Mackay has adequately stated the nature of this interaction.

There remain for consideration the two articles by Professor Mead and Professor Dennes. Mead's paper is perhaps the most ingenious article in pragmatic literature which attempts to define truth in terms of the solution of a conflict in behavior. The richness of the essay lies in part in the nature of the attempt to approach truth in this manner, and in part in the host of subsidiary references to such topics as the interpretation of Renaissance philosophy as the rationalization of the medieval cult, the nature of the symbol. the social derivation of a common world, the metaphysics of objective relativism, and the pragmatic emphasis upon a security of method rather than a permanence of structure in envisaging a reconstruction of society. These latter topics can not even be mentioned here: it is to be hoped that they will receive the expansion they merit in the coming Carus lectures. The theory of truth presented is somewhat as follows: experience itself is not a problem, since it is simply there and since every problem presupposes that which is not involved in the problem. Something to which action was previously unhesitant exhibits new characters which tend to call out responses at variance with the original responses. The problem, then, is to so reconstruct experience as to allow action to proceed. "The test of truth which I have presented is the ongoing of conduct, which has been stopped by a conflict of meanings—and in meanings I refer to responses or conduct which the characters of things lead up to" (p. 73). Truth is not the gratification which follows the solution, but is "synonymous with the solution of the problem" (p. 73).

I admit that this theory of truth has blocked my conduct for several days, and that an ongoing of conduct, such as a review involves, has required the introduction of factors not sufficiently emphasized in the above account. It is difficult for me to see the way in which action and perception are to be reconciled, and it is a question whether the truth is determined by the ongoing of conduct or by the perceptual occurrence of that which was predicted. Mead himself writes that "all experimental findings are lodged in perceptual presents and they are the final touchstones of all theories" (p. 80), so that both strains enter the account, but they are not adequately brought together. It is possible to attempt to interpret a perceptual present in terms of conduct, but the fact that actions are themselves perceived or given just as are colors and the positions of hands on dials has made many such attempts fail to

be convincing. As Mead's essay stands, the relation between action and perception, and the relation of truth to each, remain without

adequate treatment.

A further indication that Professor Mead's account of truth in terms of the ongoing of conduct requires supplementation lies in the treatment of the propositions of formal logic and mathematics. states that the "truth" of any such proposition "will be found in its effectual employment in the construction of working hypotheses" (p. 75). Now while the component propositions of formal studies may not merit the adjective "true," it is certainly a fact that true propositions may be made about the relations of such component elements or structures, and there are many such true propositions in logic and mathematics that do not seem to be reducible to factors allowing conduct to proceed and which do not seem to be merely tools for the construction of working hypotheses. While a critical pragmatism may perhaps deal with such truths, it is certainly true that few pragmatists have done justice to the domains of formal logic and mathematics.

In saying that Professor Dennes's paper on "Truth and Perception" is the most conclusive, I am merely saying that in spite of many opportunities for disagreement in detail, his thesis seems to me to be sound. Generalizing a sentence of his (p. 156), a judgment is true if what the judgment asserts is perceived or experienced to be as the judgment asserted. This is essentially the same doctrine that the reviewer has developed elsewhere as the prediction theory of truth, in which a truth is a verified prediction. Professor Dennes argues, convincingly I believe, against the view that perception can be reduced to movements or actions, and against the view that perception can be reduced to judgment. While admitting with the pragmatist that the demands of behavior are necessary for there to be any knowledge process at all, and with the idealists that ideal constructions or meanings are necessary for there to be any knowledge, he insists that "neither practical success nor rational norms have anything to do with the truth of the judgments which would never have been made without their influence" (p. 158). Admitting that this would need to be more carefully worded, the statement would seem to be a happy formulation of the pragmatic, idealistic, and empirically realistic demands.

As Professor Dennes states, the realm of truth is small, and does not include many of the most stirring and significant judgments, but it is wise to clearly separate those judgments whose validity has been certified from those judgments, however important, which must still be regarded as hypotheses, as claimants to truth, and as opinions.

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The World as an Organic Whole. N. O. Lossky. Translate 1 from the Russian by Natalie A. Duddington. New York: Oxford University Press, American Branch. 1928. Pp. vi + 199.

L'intuition, la matière et la vie. N. Lossky. Paris: Libraire Félix Alcan. 1928. Pp. vii + 177.

These two works of Professor Lossky are mutually complementary. L'intuition, la matière et la vie (the cover bears the erroneous title La matière, l'intuition et la vie) consists of three essays dealing respectively with the nature of knowledge, of the material world, and of life. The World as an Organic Whole supplies the metaphysical context.

Professor Lossky's "intuitivistic" theory of knowledge is expounded in the first essay, which, it may be noted, is simply a translation into French of the "Epistemological Introduction" of the author's Handbuch der Logik (Berlin, 1927). Intuition is not itself knowledge, but all knowledge, whether of objects present in perception or of objects remote in time or space, rests upon an intuitive basis-i.e., upon an immediate intuition of an object that is immanent to the consciousness of the subject without the intermediary of any representation, but at the same time transcendent in relation to the conscious subject himself-an element, in fact, of the external, trans-subjective world. In such intuition the object enters into the consciousness of the subject "in all its fullness, with all its systematic character, with all the relations which connect its different aspects with one another and with the rest of the world" (L'intuition, etc., pp. 43-44). But mere intuition is not enough. In order to know the object thus present in intuition, the subject, in a series of acts of discrimination and analysis, must distinguish its various aspects and trace its connections with other elements of the world. The results of such acts are expressed in judgments. Every true judgment states a necessary relation between subject and predicate, though this relation may be, in Kantian terms, synthetic rather than analytic. This necessity is the expression of that systematic interconnectedness of the world in virtue of which it forms not a chaos but a cosmos. Neither the content nor the relational structure of the object of knowledge, however, is created or conditioned by the mind of the knower; both aspects are simply given in intuition.

The oddest feature of Professor Lossky's theory of knowledge is his doctrine of "epistemological coördination." This is "a peculiar non-causal relation between the conscious subject and the object of which he is conscious" (The World, etc., p. 10). It is not to be confused with the act of intuition. It is "a preconscious union of subject and object, a previous condition of the possibil-

ity of the birth of consciousness and of knowledge, of the birth of the act of intuition directed upon the object" (L'intuition, etc., p. 24). The act of intuition is not due, even in the case of perception, "to the causal action of the object upon the subject's body and upon his mental life, for if it were, the subject could know only his own mental states produced in him by the object" (The World, etc., p. 10). It is rather the result of "epistemological coordination." But what brings the subject into epistemological coordination with one object rather than another we are not told. Nor is the nature of this relation itself altogether clear. It is described simply as "a mental relation of 'taking possession of in consciousness,' a relation that we grasp immediately when we say: 'I have such and such object within the sphere of my consciousness.' And how this differs from the sort of immanence in consciousness that occurs in an act of intuition it is very difficult to see.

The second essay, on "Matter in an Organic Conception of the World," argues the merits of a theory of "dynamistic atomism." Matter is that which fills space as an impenetrable volume. It is simply a manifestation of forces of repulsion and attraction—essentially a process. These forces are exerted, in time and space, by a multiplicity of substantial agents, themselves supra-spatial and supra-temporal, and thus immaterial or spiritual in nature. Their activities are directed toward ends, and are thus consciously or unconsciously purposive. Hence "the material process, if we consider its two aspects, interior and exterior, is never purely mechanical: it is always a psychoid-mechanical or psycho-mechanical process" (L'intuition, etc., p. 101). Only the higher grade of spiritual substances is endowed with fully conscious activity.

The principal advantages claimed for this theory are as follows. (1) It enables us to avoid the grave difficulties that have hitherto attended the attempt to conceive of the action of one portion of matter upon another, whether by way of contact or by way of action at a distance. For between the non-spatial substantial agents of dynamistic atomism there is neither contact nor distance: their action is into space, but is itself supra-spatial in nature. (2) It avoids the difficulties of psycho-physical parallelism, and makes it possible to hold to a modified form of interactionism. For it is not so difficult to conceive of the interaction of psychical and physical processes when these are viewed as activities no longer of wholly disparate substances, but of one and the same substantial being. The mode of this interaction can be exhibited, moreover, in terms of the theory of dynamic atomism, as involving no breach either of the law of the conservation of energy or of that

of inertia. Finally (3), it accords well with contemporary doctrines concerning the electrical constitution of matter; for "what are electrical charges, if not manifestations of forces of repulsion and attraction" (L'intuition, etc., p. vi.)?

The final essay, on "Contemporary Vitalism," is devoted chiefly to a somewhat detailed exposition of the views of Driesch and E. von Hartmann, by both of whom the author has been strongly in-Driesch's postulation of an "entelechy," in order to explain the peculiarities of organic behavior, is accepted. Driesch. however, "leaves unexplained the main point, viz., the way in which the entelechy can interfere so profoundly with the course of material processes" (L'intuition, etc., p. 151). His failure at this point is due to the insufficient development of his metaphysical foundations. Von Hartmann is more helpful in this respect, but still not wholly satisfactory. He mistakenly denies the plurality of substances; fails to see that "direct observation itself shows us clearly that the aroma of individuality derives from the whole and sets its seal upon the elements" (L'intuition, etc., p. 160); introduces the unfortunate hypothesis of a peculiar non-central "vital force" acting alongside other forces; and fails to realize that an abstract principle like a force, determined in its action by a fixed law, can not account for the constructive ingenuity and creative purposiveness of living organisms. The principle of life must be not a force, but a substance; for life manifests "the creative activity of a being . . . that is the source of the law and not its slave" (L'intuition, etc., p. 162).

In The World as an Organic Whole Professor Lossky gives to these doctrines a wider setting. This is not the place for any extended account of his imposing metaphysical system. But it may be remarked that it is very reminiscent, both in its results and in the nature of the arguments employed, to that of Plotinus, to whom, indeed, Professor Lossky frequently refers.

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Essays in Philosophy, by Seventeen Doctors of Philosophy of the University of Chicago. Edited by T. V. Smith and W. K. Wright. Chicago: The Open Court Publishing Co. 1929. xvi + 338 pp.

Mo movement in recent American thought has been more noteworthy or widespread in its influence than the Chicago School. The present coöperative volume of essays is a well-deserved tribute to the teaching activities of four of the great leaders in that movement, Professors Tufts, Mead, Moore, and Ames, all of whom have had a distinguished connection with the University of Chicago for more than thirty years, and some of them since the foundation of the institution in 1892.

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Besides its memorial purpose, this volume gives us an opportunity to discover what the younger group of instrumentalists are thinking, and how. Not that there is any of the sectarian spirit in these essays. Perhaps not a few of the contributors would object to the appellation of instrumentalist. All of them have been exposed to the chastening influence of recent realism, mathematical logic, and behaviorism. Yet there is clearly discernible in the majority of the essays a common temper and method of approach to philosophical problems due to their acceptance of the logic of instrumentalism and its negative metaphysical implications. At the same time the editors are assuming too much when they venture to call this attitude and philosophical temper characteristic of the "philosophically self-conscious Middle West." Even at its beginning the Chicago School was more than a geographical desig-It was a historical accident that instrumentalism found on the shores of Lake Michigan a local habitation and a name; and when we consider the history of the founders of the school, and the geographical distribution of its present adherents (of which the geographical distribution of the contributors to this volume is a fair indication), it seems not a little absurd to look upon it as the philosophical contribution of the Middle West, or as expressive of the philosophical beliefs and attitudes of this vast region. those persons who have a prejudice against both the Chicago School and the Middle West will regard this identification as For the unprejudiced reader, it is best to approach these essays for what they are: brief studies of philosophical problems written by persons who have studied under and been influenced by the great teachers to whom the volume is dedicated, and possessing only such unity of method and attitude as those circumstances would tend to bring about.

It is impossible to do more than briefly mention the seventeen essays in this volume. But mindful of the fact that there are "seventeen doctors of philosophy" lying in wait for the incautious reviewer of the book, I shall studiously refrain from generalities and attempt to give some idea of the specific contents of the various essays. There are three essays devoted explicitly to logical problems. Professor J. F. Crawford, in "Meaning and Reality," contributes a brief exposition of the instrumentalist doctrine of meanings, with the special aim of showing how these transitory and functional elements have so often been divorced from experience and erected into timeless entities. Charles William Morris, in

"The Relation of Formal to Instrumental Logic," clearly shows that deductive systems have a place only within the reflective situation, and are dependent upon human choice for the selection of postulates and the construction of definitions. Thus instrumental logic completes rather than destroys formal logic. In the same group belongs the interesting but unconvincing "Critique of Pure Science" of C. E. Ayres. Mr. Ayres' critique is founded upon a distinction between the logic of machinery, which is the basis of pure science, and the logic of supposition, which underlies social The objects of science are the creations of its own method, a method based upon the technique of perception. It follows that science can never deal with the realm of social behavior, which consists of matters not perceptible to eye and ear. than that, science itself is a social institution; and its very claim to universal efficacy is a supposition. But we are left by Mr. Avres in complete logical darkness in the realm of social behavior, a darkness unrelieved by any glimmers of the Kantian practical reason to which he apparently believes his own doctrine is the legitimate successor. We readily grant that the logic of the machine is inadequate to social behavior; but the logic of supposition appears to be no logic at all.

In the field of ethics, T. V. Smith discusses "Monistic Morality," undertaking to show that "the moral goal and the moral matrix are one," thus reconciling teleological and formal theories. This identification of the moral end with the moral source is effected through the expedient of "taking as the source of conduct the very idea of the actual end." I am not sure what this cryptic saying means, if it is more than that one can only be motivated by ideas of what one wants to do. In any case it is surprising to see such hungering and thirsting after monism. The really practical way to avoid the no doubt vicious dualism between unattainable ideals and unideal actualities is to inquire diligently which among the various possibilities suggested by the actual are to be regarded as individually and socially desirable ends. This is an inquiry which instrumentalists have as yet done little to advance, though work in this direction ought to be most congenial to the humanistic strain in pragmatism. Charner M. Perry's essay on "Reason in Moral Judgments" is particularly disappointing in this regard. The rôle of reflective choice in moral matters, according to this author, is restricted to showing that, given certain existing and unquestioned activities and purposes, x would be better than y. Mr. Perry really does not mean that reason has nothing to do with questioning these existing activities and purposes; but his distrust of absolutes prevents him from approaching the special problems that arise in the

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application of reason to moral values. Granting that we may no be able to reach finality, yet some ends are presumably better than others. The unexamined life is certainly not fit for an incrumentalist to live.

It is pleasant to find in this volume itself a criticism of this Mr. A. K. Rogers' able and conlacuna in pragmatist ethics. vincing treatment of "Instrumentalism and Ideals" voices his dissatisfaction with the instrumentalist tendency to be preoccupied with means to the neglect of evaluation and criticism of ends. fact that elements of feeling are inevitably bound up with ends and values should not, Rogers insists, lead us to leave these judgments lying outside the realm of rational discussion. he suggests, at least three criteria for the objective measurement of value: viz., durability, extension (i.e., the number of people enjoying the value in question), and quality. Even more important than these criteria is the fact that human judgments upon value do in reality tend to converge as a result of rational discussion. An interesting approach from a different direction to the same problem is presented in L. L. Thurstone's competent essay on "The Measurement of Psychological Value." The same mathematical technique which he has previously employed in the measurement of attitudes permits us to measure the appetition-aversion toward an object, or its "psychological value." The usefulness of such a method for measuring spontaneous and unreflective appreciations is quite evident; unfortunately it is limited to unreflective judgments, for the introduction of factors leading to rational reflection and choice complicates and invalidates the procedure.

The two essays on religion may appropriately be treated here. Mr. W. K. Wright expounds a theory of "The Relation Between Morality and Religion." These institutions he regards as two different attempts on the part of the group to preserve and transmit recognized group values. Though these two sets of values are not to be identified, yet morality and religion have rendered each other mutual service-religion by providing supernatural sanctions to moral standards, and morality by giving metaphysical support to some of the postulates of religion (God, freedom, immor-Mr. J. R. Geiger's essay on "Prayer, Autosuggestion, and God" shows a clear understanding of the special problems of the philosophy of religion, as well as a fineness of feeling for the special qualities of religious experience. The thesis maintained in the essay is that the psychological account of prayer as merely autosuggestion is an inadequate description of the experience which prayer is, a thesis briefly but convincingly presented.

Perhaps the least satisfactory application of the instrumental-

ist doctrine is found in the essays on esthetics. In Miss Kate Gordon's thesis that art is not the expression of anything, but the creation of something, and Mr. Van Meter Ames's interpretation of art as the dexterous adaptation of means to ends, the danger is very evident of doing less than justice to the esthetic experience through trying to fit it into the instrumentalist logic. But in each case the esthetic doctrine of the writer seems to be broader than the bare statement of these theses would indicate. Mr. Ames's thesis, for instance, is not consistently maintained and I suspect that its plausibility for him is due to the fact that he has interpreted it broadly enough to include elements of quite divergent theories. Certainly he insists throughout that the sense of beauty is no intermediary stage of the vital process, but an ultimate peak of experience.

The remaining essays in the volume can only be mentioned. Professor Wesley Clair Mitchell's "Postulates and Preconceptions of Ricardian Economics," Professor D. A. Piatt's plausible exposition of "Berkeley's Behaviorism," and Prof. Clarence H. Hamilton's article on "Buddhistic Idealism in Wei Shih Er Shih Lwen" are all interesting contributions to the history of thought. fessor Ellsworth Faris gives a very brief survey of "Current Trends in Social Psychology"; and Professor John Wild writes the only essay in cosmology in the entire volume, on "The Grand Strategy of Evolution," a militantly teleological interpretation of the worldprocess, which is pictured as an effort to achieve the absolute. Lastly, Professor J. R. Kantor in "The Philosophical Implications of Organismic Psychology" treats us once more to a demonstration that all traditional philosophies are condemned as verbal systems because of their preoccupation with psychic processes and absolutes. It is fortunate for the reader that the organismic psychology here outlined with its "implicit behavior," stimulational properties, and the like, is itself such a convincing illustration of what he means by a "verbal system." If Professor Kantor could only see that he is himself a forthright scholastic craftsman with a complex for generalizing and attaching labels, we could all commit hocus-pocus together, and remain on the best of terms.

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## JOURNALS AND NEW BOOKS

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#### NOTES AND NEWS

#### MARY WHITON CALKINS

The members of the Executive Committee of the Pacific Division of the American Philosophical Association wish to express on behalf of the Division and for themselves their grief over the loss American Philosophy has suffered through the untimely death of Mary Whiton Calkins. An erudite scholar, a skillful teacher, an incisive thinker, a noble woman, Miss Calkins served the cause of disinterested knowledge with genuine devotion. In criticism she was always patient and fair, of incomparable courtesy, willing to learn from the views of others, no matter how opposed to her own.

Steadfast in her positive convictions, she presented the truth as she saw it, in writings as rigorous in method as they were forceful in style. To these intellectual gifts she united a capacity for friendship truly great. In California where she spent several seasons, her many friends mourn her death and treasure her memory.

For the Executive Committee,

J. LOEWENBERG, President. H. D. ROELOFS, Secretary.

22 March, 1930.

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## THE JOURNAL OF PHILOSOPHY

#### ACTION AND CERTAINTY 1

DEWEY'S philosophy is not a set of propositions: it is a national movement. On good instrumental grounds this is what it ought to be. To this extent Dewey might be willing to agree that the real and the ideal are one! At any rate, on his own theory, the right way to estimate his philosophy would be to examine, not the propositions, but the movement.

Before I grasped this point I wasted much labor in the attempt to criticise Dewey's propositions. In 1897 or thereabouts I published a complete refutation of the Dewey-McClelland method of teaching number. That method proposed to define numbers by ratios, so that the number one was expounded, not as the first cardinal integer, but as the ratio of anything to another thing of the same size. It thus required two objects to define "one." Pointing this out in my first philosophical essay, I received my first philosophical shock in the perfect impassivity with which Dewey received his theoretical ruin. I doubt whether to this day he is aware of the disaster, or of the existence of my article. Occasional subsequent onslaughts on my part have been equally conclusive.

I might be inwardly troubled, even now, by this godlike calm of Dewey's under fire if I had not recently witnessed his equal serenity under a great wave of world-wide good-will—not untouched, but adequate and unperturbed. Living as he does in a sphere beyond the good and evil of praise and criticism, I have come to regard him as an authentic human symbol of The Absolute! I shall therefore not hesitate, on this occasion, to renew the discussion. That, I think, is what he would desire. I can imagine him saying, as Socrates—under less happy circumstances—once said: "To-day, if we can not revive the argument, you and I will both shave our locks"!

But let me begin by saying something of what I have learned from this philosophy. I owe much to the habit, painfully acquired, of looking for the meaning of terms and propositions in what they lead to, and especially in what they lead us to do. The blank face of a proposition is deceptive: its very self is in its working out. I venture even to embroider a little upon this theme. The work of a proposition is often less a construction than a fight. It has been of

<sup>&</sup>lt;sup>1</sup> Read at the meeting of the American Philosophical Association, December 30, 1929, New York City.

the greatest help to me, especially in reading the history of ideas, to consider propositions in terms of their fighting-value.

Take the proposition, All men are created equal, as it came from the pen of Thomas Jefferson. What did Jefferson suppose that to mean? Mr. Archibald Grimke accuses Jefferson of insincerity because he was, and remained, a slave-holder. But Jefferson's eye was on another battle. His dictum had nothing to do with the fight against slavery, but with the fight against a governing class, pretending a natural superiority and a divine right. This was the fighting-meaning of his thesis, and he can not on this count be called insincere.

Or consider the doctrine of Nationality as it appeared in the nineteenth century. The foreign ministers of Great Britain evoked this principle in order to support the efforts of Greece and Italy to become autonomous. It did not occur to them that zealous formal logicians would extend the same principle to India and other portions of the Empire. That doctrine was intended by them to do specific work in Europe; an indiscriminate extension to other fields and other campaigns, however true to the verbal surface, was false to the fighting-sense of the idea.

In public law and in theology, the interpretation of all general formulæ must be sought in their original fighting-purport, and logical extension runs the risk of complete impertinence. The Monroe Doctrine in its own day had specific work to do: for Roosevelt, by logical extension, it did vastly different work; and now, still other and unexpected work—as in raising misunderstanding with our neighbors to the South and in hindering our coöperation with the League of Nations. The charge of insincerity here rests rather upon the logicians than upon those who look to the original fighting-value of the formula.

I presume that instrumentalism itself has a fighting-value, and that much of its meaning lies therein.

It has clearly some important work to do, not solely in the minds of the philosophical fraternity, but in the minds of wide masses of the American people. Now this people has been, and is, a vigorously active people; and it has been widely assumed that this practical bent has predisposed us to be pragmatists. This, I believe, is the precise reverse of the truth. It is a commonplace of social psychology that the active temper tends to dogmatism: the active man, like the active crowd, needs to assume something as fixedly true, beyond the reach of enquiry, a pou sto that justifies and supports a strong thrust. Common action nourishes itself on slogans, not on hypotheses, and the typical "man of action" displays a set jaw and an unyielding maxim. It is because we are dominantly a people of deeds

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uneds that we are inclined to be a dogmatic nation, believing stiffly in eternal principles, final conventions, natural rights, an unchanging Constitution and mechanical theologies. The great public work of the instrumental philosophy has been to limber up the ways of knowing of this people, to reduce fixed dogmas to working-hypotheses fit for experiment; to give the intellectually traditional, authority-seeking, hero-worshipping American the courage of his own experience. As a people we do believe in the dignity of labor (and so far as I can see, we are the only people under the sun, unless it be Russia, who really have that belief in their bones). We must carry this belief over into the dignity of a laboring philosophy, arising out of and pertinent to existing crises, not to ancient ones.

It is because America is *not* instinctively pragmatic that pragmatism has had, and still has, much fighting work to do.

Among the professionals likewise, it has to combat those traits which lend support to this impulsive popular dogmatism, such as the idle securities and finalities of abstract truth, or the lingering traces of those gods of Epicurus who do not concern themselves with human affairs. Especially it has been charged to widen the scope of the inductive methods, hypothesis and verification, in the field of social philosophy, and thereby to render our moral thinking flexible and contemporaneous—not to destroy the law and the prophets, nor yet to fulfill them (for that, too, would be looking backward in a way), but to endow them with the divine capacity of perpetual self-regeneration.

This is to make philosophy a highly responsible undertaking, indeed the most responsible of human enterprises. It is at once a promise to the common man that philosophy shall mean something to him; and it is a promise (not without an admonition) to the philosopher that when he has given his thinking its due prospective significance, philosophy will once more bear its due part in the national life. When our work becomes so much a matter of public importance that some one of us is asked to drink the hemlock, solely on account of his philosophical teaching, then at least we shall have learned a part of the lesson of instrumentalism.

These, in my judgment, are some of the continuing good works of instrumentalism; they constitute its instrumental truth.

And now I have to record why I am not wholly satisfied with this variety of truth. I believe that we must continue to judge the validity of propositions in some independence of their working. If this is true, it will not be out of place to look once more at the propositions of instrumentalism apart from their working- or fighting-value.

(The mere fact that we can make this distinction goes to illustrate

the argument. And if the instrumentalist should be so unwary as to defend these propositions, merely as propositions, his defense would amount to a surrender of his position. For he would be recognizing meaning apart from working. In this case, the theoretical critic has the field to himself, and the argument comes to an abrupt end. Let us waive this point!)

It would hardly be necessary to restate these familiar propositions except to show what limited portion of Dewey's philosophy I plan to deal with, and to make clear what version of his doctrine I am taking for discussion. The central thesis of instrumentalism I take to be this:

(1) That the meaning of conceptions and propositions is always functional. They spring, not out of blank presentation, but out of hesitation, perplexity: they are projects of solution, promissory and hypothetical in character. Their validity or truth consists in doing what they thus claim to do, namely, in resolving the difficulty, and in being, in this sense, verified.

From this would necessarily follow these corrollaries:

- (2) That there is no strictly immediate truth;
- (3) That there is no strictly stable or eternal truth;
- (4) That there is no a priori truth; and, in sum,
- (5) That there can be no significant theoretical certainty. My effort will be, not to introduce novelty into the examination of these doctrines, but simply to express as clearly as possible my persisting difficulties, and to reduce them, where I can, to a principle.

My difficulty with the first proposition, the definition of trueness, tends to condense itself into a principle which we might call the non-correspondence of meaning and working. To every conception and to every general proposition there may be attached an indefinite variety of workings; to every working, in turn, a variety of meanings. If the meaning were to be found in the working, there should be a unique and unambiguous correspondence betweeen these entities: this correspondence does not exist.

Our proposition, All men are equal, will serve to illustrate the point. Not all of this proposition was at work in Jefferson's day: more and other work was capable of coming out of it. In spite of Jefferson's pre-occupation, it was legitimate to set that same generality to work on the slavery business: it still has work on hand, far beyond Jefferson's horizon, in the treatment of backward peoples, and who knows what further, to the end of time. Its identity and life as a proposition can not be limited by the special perplexities of any one age. Nor can it be identified with the sum of a series of the indefinitely many possible workings it may sponsor. For it has a

present meaning of some sort, whereas many of these possible programs of action are, at any given time, not so much as contemplated.2 If we only know a thing when we see what comes of it, then indeed, we never know anything; for we never have in hand what is yet to eventuate.

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Look at this non-correspondence from the other end. (what is not highly improbable) that Jefferson began first with his fight and then cast about for a generality to sanction the conflict he felt to be inevitable. Is it logically required that he should have lighted on just this maxim about human equality? If we knew by inspection just what universal is exemplified in a given particular, law, induction, and living would be much simpler than they are. versatility of mathematicians and physicists in setting up divergent hypotheses which lead to the same phenomena has prepared us to believe that no course of action is uniquely dependent upon any one theoretical premise. If the meaning is to be found solely in the progress from problem to solution-in-action, we should have to agree that any one of a number of "rationalizations" of this process would be verified by its success. This conclusion being eminently unacceptable, we are driven to locate the center of meaning in the proposition, and to regard it as separable from any specific course of action.

The non-correspondence between meaning and working begins in the process of conception, as an incommensurableness between objects and interests.

I am hungry: that is a state of dissatisfaction, favorable for starting a thinking process. I see a red apple: I at once conceive it as a possible food. That conception is clearly functional: it is a promissory hypothesis and carries a plan of action definitely related to my hunger. But I note that the redness of the apple, or for that matter its apple-ness, has no essential relation to its food-A baked potato would do the same. I can not, therefore, regard the apparition of the apple as being just covered by, or

<sup>2</sup> The class of all the possible programs of action derivable from a given generality is a class which is in fact never contemplated, and which is probably in strict logic not contemplable. But the meaning of the proposition is contemplable, otherwise it would be impossible to "apply" it to new circumstances, or to "deduce" from it further plans of action. From what are the new applications derived? Surely not from previous programs, such as Jefferson's. Then from something distinguishable therefrom: that something different is the meaning of the proposition.

It must be noted, too, that some programs may lead to auspicious, there to inauspicious conclusions; some may eventuate as they promise, others may lead to disappointment. The solving, or verifying, outcome of any one group of programs can not guarantee that of others. Hence no finite series of verifications can constitute the truth.

exhausted in, that food-interest; nor is my food-interest exhausted in the apple. There is something in the apple-fact, and therefore in the apple-idea, which extends beyond any interest and any process which I then and there project. The active-meaning omits much of the fact-meaning: the fact-meaning (or object-idea) appears primary, admitting the active-meaning as a temporary rider, due to a momentary and somewhat accidental relationship. meaning, based on presentation, contains indeed the possibility of much as yet unimagined use and interest, and also the exceptional possibility of uselessness. But the two, object and interest, clearly have no common measure and there is no way to make them pre-Thus the instrumental element in idea-making cisely congruent. presupposes an immediate or presentational element as more funda-

In his notable chapter on "The Play of Ideas," Dewey recognizes the absence of one-to-one correspondence between ideas and plans of action. He does not, however, draw the consequence which seems inescapable, namely, that the working-test of truth is in a perilously loose relation to the proposition tested, and will yield to a more direct test when we can get it.

The lover, unable to perceive directly how he stands in the regard of his beloved, is driven to the method of hypothesis and verification: "If she loves me, she will make a friendly response to this advance, appear at the window when I sing, answer this letter." He must rest his case for the moment on a succession of progressively bolder pragmatic tests. The beloved, in the same situation, if she finds herself forbidden the initiative implied in all experiment, may be momentarily reduced to plucking the petals from daisies-I am not sure whether this is instrumental! But both maintain a hope for the more nearly immediate evidence of avowal, and the ideal of telepathic perception. Such immediate evidence is indeed dangerous evidence, in this case, without a long-continued series of good works; but clearly that series of works might attain pestilential length unless it could sometime soon reveal its essential inwardness by direct expression.

Or take an instance like this: In the study of radioactivity, it early became a question whether these so-called "rays" are really vibrations or discrete particles shot off from radio-active elements at high velocity. Somebody is led to suspect that the alpha-rays are nothing more nor less than positively charged atoms or helium. But there is no hope of observing directly any such ray, still less an individual atom of helium. So one tests deductions from the hypothesis, such as this, that the atomic weights of elements in the uranium-

<sup>3</sup> The Quest for Certainty, pp. 156, 158.

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radium series ought to differ by multiples of the atomic weight of helium, which turns out to be the case. This and other verifications tend to confirm the hypothesis; but they still leave it possible (and widely believed) that these hypothetical atoms are merely signs for reckoning, with only a remote symbolic relationship to any spatial fact.

Now one day Sir William Crookes invents the spinthariscope. And here under a lens one perceives, not the atoms to be sure, but the individual sparkles which occur when these minute entities bombard the screen of zinc sulphide there focussed. The collisions can be located and counted. The helium atom takes on a numerical and spatial individuality. This kind of corroboration of the hypothesis has a wholly different cogency from that of successful practical prediction. It is presentational. Manipulative activities are required to get it; but they are irrelevant to its force. The primary meaning of verification lies there, and we resort to it whenever we can get it.

Since only a part of a general proposition can do work at any time, an instrumental confirmation can always be had for a proposition which is only partially true.

Half-truths actually do a vast amount of valiant service in the world, namely, when they announce that half which is for the time being ignored. Thus, if men are too well steeped in tradition, it is in order to preach the gospel that "All things change." This half-truth will for a time be instrumentally justified. Then, when under this teaching men have become so flexible and shifty as to lack all spine and consistency, its star begins to set, and the times are ripe for the complementary half-truth, that "Whatever is real is permanent," which may then receive the same kind of confirmation.

This epochal variability in the working-power of partial truths (and most of the working-truths of history I judge to have been of this sort) tends to bring our perceptions of truth into that rhythm in which some sort of "dialectical" process can begin. Such a process is bound to commence when one observes his own vacillation, and tries to remedy it. What requires the revision is not any failure of the instrumental working—the half-truths could continue to labor in alternate shifts—it is the demand for inner consistency. The structural principle thus announces itself as something again independent of the pragmatic principle. Not at odds with it: for there can be no hostility between Dewey and Barbara. Only, the interest in trueness tends to migrate away from the periphery of consequences to the center where Barbara spins out the materials of immediacy into a coherent, continuous fabric.

So far, I have dealt with the first two propositions, the instrumental definition of truth, and the thesis that there is no strictly

immediate truth. Now consider the third thesis, that there is no eternal truth.

It is evident that the demand for consistency is at the same time a demand for stability in propositions. That is, the kind of truth we want is one we can hold to in all circumstances. The business of the dialectic is to find a conception of things which will hold good, and not for a little while, nor for an epoch, but always. If we prefer to translate stability by eternity, by way of indicating the limit to which stability tends, there is no harm done. The demand is the same whether there is much or little or no such ideally stable truth available.

And let us note that the need in question, while it is a logical need, is not merely logical. Nor is it merely a psychological oddity, such as marks the temperamentally active type of humanity, of which we were earlier speaking: it lies in the nature of all action. For all action intends to change something in particular: and in order to effect just this alteration in the world, the frame of action must hold still! The maxim for action is: Regard the universe as static except where you want it to budge. The ideal situation for the man who wants to move things is to have an unalterable conviction at his back: "Here I stand, I can not otherwise, God help me." The man who can say that will either make things happen or be himself obliterated.

Nothing to my mind more strikingly illustrates, and at the same time criticises, the instrumental principle than the immense working qualities of propositions supposed to be not only eternal but transcendent as well. Theological orthodoxies and heterodoxies have sometimes been stupidly adored in that detached and footless contemplation which is the bête noire of the instrumentalist. have at least as often appeared in history as things done! Carlyle writes of those intractable heathen, the Wends, in the early days of Brandenburg: "Being highly disinclined to conversion," he says, "they once and again burst up, got hold of Brandenburg, and did frightful heterodoxies there"! After two centuries of clash these Wends were either blown up like dry powder or else "damped down into Christianity," which implies that they began to do orthodoxy, and that the new deeds were of a markedly different cast. In either case, it was a doxy that they did: good instrumentalism, but with an absolute for an implement or battle axe.

As it not a momentous thing for our theory of truth that all major plans for human action, whether or not we who look backward, can see them tied to half-truths, have tried to get hold of absolutes and universals? And please note: it is not for moral holidays that these absolutes have been required.

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Why, to fight British Torydom or slavery, do Thomas Jefferson and his successors reach out for a formula about "All men," instead of taking some legend that will snugly fit the moment's case? Is it because they do not want this day's business to be itself temporary and abstract and to be all undone and done over? And is it because they know that the fruit of action can be no more permanent than the sight it comes out of that they need to see the momentary effort in its setting and make the whole of things a party to what they now propose to do? I suspect that nothing short of a true property of all men would have worked for Jefferson's revolution: it was an eternal verity of some sort that King George was disowning, and it would take that same eternal verity to defeat him. Let us say, if we think so, that Jefferson got only a relative and approximate truth: I only remark that such a suspicion on his part would have lamed him for the moment, and sent him searching for another and more durable universal. It is not the scorn of action, it is the love of it, which prompts the quest for theoretical certainty, such as one can have before action begins. No one can be mad, of anger or devotion, unless he is first sure of something.

I suspect that at bottom Dewey is as little enamored of incessant change and relativity in the world of judgment as anyone. menting on Charles Peirce, he dwells approvingly on Peirce's idea of reality: "Reality," he says, "means the object of those beliefs which have after prolonged and cooperative enquiry become stable; and truth is the quality of those beliefs."

What is meant by a belief "becoming stable"? If we can identify the belief during the period of its variation, there would appear to be a core of it that is not affected by the variation. There is, of course, no incompatibility between the persistence of a truth, and its change in the sense of clarification and growth. We may agree with Dewey that "the scientific attitude, as an attitude of interest in change instead of interest in isolated and complete fixities, is necessarily alert for problems," 4 and its work forever unfinished. it is equally evident that the whole scientific and experimental undertaking aims at and believes in permanence. For unless experiment can establish something, and unless something of what we suppose "established" stays established, endures, accumulates, the whole experimental business becomes a fool's paradise.

The corpus of knowledge is at no moment static: but we know this, that change does not eat out what is true in it. From this two things follow. First, that survival becomes an empirical criterion of trueness, so that for instrumentalism also the only truth which fully deserves the name is eternal truth. Second, that whatever

<sup>4</sup> The Quest for Certainty.

turns out by survival to have been the true element in our present beliefs, we now have that truth, and have had it, whether or not we can now extricate it from its adulterants.

But of what advantage is this present possession of eternal truth,

if we never know certainly what it is?

The answer lies in that aspect of truth which we call the *a priori*. If there is any *a priori* truth, it is presumably of the durable variety; and might conceivably furnish something to hold to, for purposes of action, while we are waiting for the rest of our durable truth to survive! But is there any such truth?

It is hard to see how anyone who places faith in scientific method can doubt the *a priori*. For scientific method (which we may allow to be the only fruitful method, because it is a composite of every method) necessarily makes appeal to truths which can never be tested.

Take the assumption that the standard measure of length remains constant. About the standard meter-stick in Paris, or any other physically extant measure, I may refuse to make that assumption. I may imagine it subject to FitzGerald Contractions, or any other type of distortion I please. But in that case I conceive myself as measuring the altered length in terms of a measure which does not vary. An assumption which we can not avoid making, and which we assume when we try to test it, may fairly be called an a priori proposition.

Kant in his pragmatic moments made use of another variety of a priori judgment. His postulates of practical reason, as he thought, were such as to make very tangible differences in behavior and experience: but these eventualities need not be waited for, inasmuch as they were necessary consequences of the postulates. They could be known in advance. Instrumentalism seems to adopt the view that we do not know what results are going to be until we reach them. But why? Why must the relation between a belief and its working-out be purely factual? If the consequences really pertain to that belief, the connection is not accidental, and it must be theoretically possible to foresee them. As an ancestor of pragmatism, Kant's method here seems to deserve reconsideration. Wherever necessary consequences can be perceived and evaluated in advance, we have an a priori judgment.

Our more general ethical standards seem to be of this nature. With all the immense force of experience and social tradition in molding our ethical sense, it is not yet obvious to me that the experience of eventualities can ever instruct us in the primitive distinction between right and wrong. We can hardly adopt the view (to quote a colleague) that Cain did not know it was wrong to kill Abel until

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after he had done so. Unless the discovered consequence confirmed an uneasy foreboding of his own, already ethical, it could teach him nothing except that he had made an unfortunate decision. Nor ean we adopt the view that the "lost causes" of mankind are proved by the outcome to have been somehow illicit. I am wholly convinced that it is wasteful, and may be vicious, to contemplate impossible ideals; that an ideal ought to be a pressure toward technical embodiment; that if ends are holy, the use of means is not less so. are we to know which ideals are possible and which are not? are to avoid the vice of cherishing impossible ideals, we must be guided either by an a priori knowledge of what ideals are possible or impossible, or by an a priori knowledge of what ideals are right. If we assume (with Joan of Arc, for example) that what is right must be somehow possible, we are relieved of the effort to foresee ultimate outcomes; the whole burden of judgment rests on the prior assurance of rightness. The event of failure reacts, not on the validity of the ideal, but on the wisdom of the means used or the energy of the agent. The defeated reformer, lover, patriot may have to curse himself as a fool: but he has still to say, "That for which I tried had the quality of goodness in it: my knowledge of that quality was prior to eventualities, and remains unmoved by them."

An element of knowledge may be there and may be effective long before it can be isolated, as children cut corners long before they can announce that the straight line is the shortest distance. not absurd to suppose that a priori knowledge may have a de facto existence, and yet a very belated official recognition. commend to your judgment a view of a priori knowledge which sees it as growing out of experience. We all want to be good empiricists; we have all grown humble in respect to the value of abstract rational anticipations of experience. Most of us, I believe, would like to join Dewey in getting away from the old passive copying empiricism, and in uniting with a better brand some recognition of the active contribution of the thinker: we believe Kant was right in seeking a synthesis of the empirical and the rational, and we further agree in not being satisfied with his proposals. May I suggest, then, that the office of experience is not solely to supply raw material, nor to provide simple ideas, nor yet to tease knowledge out into the ventures of action, but to present connections as factual in which we may, by slow degrees, recognize the necessary. The a priori is an element of knowledge which shells out of our changing empirical judgments as something implicitly presupposed and invariant. We may call it the uncovered a priori. And if the principle of this uncovering be admitted, we may willingly consult experience until the end of time for ascertaining the full measure of that a priori knowledge which even now we are using.

One such a priori element I seem to find uncovered in Dewey's Quest for Certainty. It occurs in a passage which, rejecting "fixed beliefs about values" so far as their contents are concerned, mentions one value which no future experience can dislodge. This invariant value is, to put it briefly, the value of trying to realize value. fully, it is the value "of discovering the possibilities of the actual and striving to realize them."5 Devotion to this value is declared invincible; it is the fit kernel for a forward-looking religious attitude toward the world. I need not emphasize the importance of this passage.

It constitutes of itself a comment on another thesis of instrumentalism, namely, that all values are immanent, human-born and man-achieved; and that we do well to get rid of their traditional transcendent moorings.

To me this doctrine often comes with a sense of relief; as if we would take a distinct step ahead in replacing the primordial valuereservoir of a certain type of idealism by those prospective and possible values which stir millions of finite beings to continued effort. Surely the best qualities of experience are things achievable, not antecedently there. The equality of men of Jefferson's faith,-who can say it is there? Suppose we regard it rather as something to be brought about. To treat men as equal is to bring equality to pass. We can confer equality: the responsibility falls on our shoulders, and the world, which seemed a monstrous enigma under the doctrine of the is-ness of equality, becomes once more a hopeful place.

But this change does not dispel the metaphysical horizon. If value is creatable, the universe is already the entertainer of this pos-Possibility is neither a human product, nor a mere form of expectancy: it is an objective property of things, antecedent to our action. Further, it is not there by accident: the universe which contains it can not be conceived as indifferent to its actualization. Possibility thus takes on the hue of obligation; and no single value in the human scene remains unaffected by this relationship. For a value which in our cosmic setting we are due to work out acquires a momentousness not attainable by a value which we merely may work out if we are so disposed and have the needed energy.

The value of trying to realize value appears to me to belong to this metaphysical setting of action; and if we wished to apply to it the opprobrious terms, "transcendent," "eternal," or even "absolute," the objections would arise chiefly, I think, from the traditional connotations of these words. I will confine myself to calling it a case of the uncovered a priori, and to making a plea that we extend the use of the principle by which this invariant is uncovered.

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For we are going to get truth by endless experimenting, and there is presumably a charter for this experimenting which is not itself establishable by experiment. We are going to get truth by induction, and whatever the inductive postulate is, we can not prove it by induction. To my mind, experiment and induction are ways of trying to unearth necessities; and there is a prior necessity laid on us for continuing this search for necessity, whose authority no success can confirm and no failure unsettle. Here we have a small group of a priori elements, which are in a way formal and transcendent: that is, they are not in the fight, because they constitute the arena and the urge which makes the fight go on! I am disposed to see in them available theoretical certainties which underly all human ac-To them the more concrete certainties may attach themselves in proportion to that power of genius which, in the midst of incoherent and disagreeing empirical cases, can discern the universal element, not perfectly but clearly enough to do a man's work in the world.

Dewey recommends a philosophy "willing to abandon its supposed task of knowing ultimate reality and to devote itself to a proximate human office." 6 This can never happen: for philosophy can not perform the second function without the first. Men are like tigers in one respect which is to the credit of both: they can't enjoy food until they can see their way out of the trap. The amelioration of details leaves them ill at ease while they are without confidence in the frame of things,—if only a negative confidence that its uncontrollable reaches are not certainly brewing the spume of death to them and their works. In any case, we shall do the human offices with all the wisdom we can muster; but it is the peculiar province of philosophy to read and truly report the ultimate auspices of these deeds, be these auspices good or ill.

I plead for the recovery of a Platonic element in our way of A renewed grip of the changeless vein in things and an inkling of totality, so far from veiling the transitional, or withering experiment, or drugging the spirit of enterprise, would show themselves the very nerves of action. There is nothing infusible in these two things, the great work of Dewey and the Platonic vision. Knowing and doing are not the same thing: nothing but confusion can be got from identifying them, for in that case activity itself could not be known. No doubt they are of a piece, inseparable: they reach their culmination together; knowing is at its height at the point where the present deed plays against the outer But as doing, like the galloping hoof, gathers the earth into it and puts the earth behind it, so about the moment's knowledge

<sup>6</sup> The Quest for Certainty, p. 47.

born in that same contact, there spreads the horizon and the stable

arch of the sky.

When Dewey accepts for himself somewhat tentatively the designation "experimental idealist," then we who have been thinking of ourselves as idealistic experimentalists, may be permitted to recognize a kinship and to join in the long quest for the remainder of our certainty, some of which we think we have in hand.

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#### PRAGMATISM AND CURRENT THOUGHT 1

T is somewhat difficult in the case of pragmatism to determine what are its essential and distinctive theses. That there should be thirteen distinguishable pragmatisms, however, is not a peculiarity: these could be set alongside the thirty-seven idealisms and fifty-one realisms. William James is reported to have said that he was pleased to find that pragmatism had this wealth of meaning; he accepted all thirteen. In any case, such variety merely marks the fact that pragmatism is a movement, not a system. Its beginnings are attributable to Charles Peirce. But Peirce has something the quality of a legendary figure in American philosophy. His originality and the wealth of his thinking are not fully evident in his published writings. Apart from a few persons—amongst whom were James and Royce-some of his most important conceptions can have had little influence, because they have never been printed: and the coincidence of these doctrines with the views of later pragmatists is distinctly limited. James's enthusiasm for them must in part be set down to that catholicity of appreciation which was so notable a part of his character. James called himself a "radical empiricist" as well as a pragmatist, and the connection, or lack of it, between these two aspects of, or strands in, his philosophy, has been a matter of some question. We must, of course, look to Professor Dewey's writings for the integration and systematic elaboration of pragmatism. But no one could have exercised the quite unparalleled influence which he has had upon American thought without giving rise to a wealth of resultant views which is a little confusing when one tries to grasp their coincidence or central meaning. Hence it is not a matter for surprise if those most deeply influenced by him show a tendency to drop the term, lest a too extended agreement with one another be suggested, and that those of us who still have ventured to use it are doubtful of our right to the designation.

If, then, I venture to suggest what is the core of pragmatism, and 1 Read at the meeting of the American Philosophical Association, Dec. 30,

1929, New York City.

what I chink may be the chief significance of it, both in philosophy and for other branches, I hope it will be understood that I do not take myself too seriously in the matter. This view is presented to those who will best know how to correct my mistakes.

Pragmatism is, as James indicated, not a doctrine but a method: viewed logically, it can be regarded as the consequence of a single principle of procedure. But this principle, though by itself it says nothing material in the field of metaphysics or epistemology, and though its application is by no means confined to philosophy, has nevertheless a wealth of philosophic consequences. It implies at least the outline of a theory of knowledge; and if it dictates no metaphysical theses, at least it rules out a good deal which has been put forward under that caption, and it operates as a principle of orientation in the search for positive conclusions.

I refer, of course, to the pragmatic test of significance. stated it as follows: "What difference would it practically make to anyone if this notion rather than that notion were true? practical difference whatever can be traced, then the alternatives mean practically the same thing, and all dispute is idle."2 formulated it with respect to substantive concepts rather than propositional notions—though the two come to the same thing: "Our idea of anything is our idea of its sensible effects. . . . Consider what effects that might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object." It is one importance of this pragmatic test that it is so obviously valid and final: once it has been formulated, there can be no going back on it later without conscious obscurantism. Any consequence of it, therefore, shares in this imperative and binding character. Peirce's dictum draws our attention to the fact that there is a kind of empiricism which is implicit in the pragmatic test: What can you point to in experience which would indicate whether this concept of yours is applicable or inapplicable in a given instance? What practically would be the test whether your conception is correct? If there are no such empirical items which would be decisive, then your concept is not a concept, but a verbalism.

If one does not find in Professor Dewey's writings any terse

<sup>2</sup> Pragmatism, p. 45.

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a "How to Make Our Ideas Clear," Chance, Love and Logic, p. 45. Compare: "... Since obviously nothing that might not result from experiment can have any bearing on conduct, if one can define accurately all the conceivable experimental phenomena which the affirmation or denial of a concept could imply, one will have therein a complete definition of the concept, and there is nothing more in it. For this doctrine he [the writer, Peirce] invented the name pragmatism." "What Pragmatism Is," Monist, Vol. 15, p. 177.

formulation which is exactly parallel (and of that I am not sure), this is only because here the pragmatic test is clothed with its consequences; it pervades the whole, and is writ large in the functional theory of the concept. Ideas are plans of action; concepts are prescriptions of certain operations whose empirical consequences determine their significance. This connotation of action is not, of course, a new note; it appears in Peirce's emphasis upon conduct and experiment, and in James's doctrine of the "leading" character of ideas. Is this functional theory of the concept implicit, like empiricism, in the pragmatic test?

So far as Professor Dewey himself is concerned, it would appear that this doctrine antedates his explicit pragmatism, and may have been the root of it. (Perhaps he will tell us.) It appears in his paper on "The Reflex Arc Concept in Psychology," the first important document for "functional psychology," published in 1896.4 He there criticises current psychological theory as not having sufficiently avoided the fictitious abstractions of sensationalism. sensation or conscious stimulus is not a thing or existence by itself; it is a phase of a coördination." 5 "A coördination is an organization of means with reference to a comprehensive end."6 "The stimulus is that phase of the forming coördination which represents the conditions which have to be met in bringing it to a successful issue; the response is that phase of one and the same forming coördination which gives the key to meeting these conditions, which serves as instrument in effecting the successful coördination. . . . The stimulus is something to be discovered. . . . It is the motor response which assists in discovering and constituting the stimulus." "sensation" or "sense data" for "stimulus," "operation" or "action" for "motor response," and what is here quoted will be found occupying a central place in all Professor Dewey's subsequent expositions of his pragmatic doctrine. Three years later, he wrote: "I conceive that states of consciousness . . . have no existence as such . . . before the psychologist gets to work." "Knowing, willing, feeling, name states of consciousness not in themselves, but in terms of results reached, the sorts of value that are brought into experi-

<sup>&</sup>lt;sup>4</sup> Psychological Review, Vol. 3, pp. 357-370. My attention was drawn to this by its citation in Boring's History of Experimental Psychology, pp. 540-541.

<sup>&</sup>lt;sup>5</sup> Loc. cit., p. 368.

<sup>&</sup>lt;sup>c</sup>Loc. cit., p. 365.

<sup>7</sup> Loc. cit., p. 370.

s"Psychology and Philosophic Method," address before the Philosophical Union of the University of California, 1899, pp. 6 and 10. It is interesting to remember that in the preceding year, James presented the first statement of his pragmatism, "Philosophical Conceptions and Practical Results," under the same auspices.

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If, then, I am right in the derivation here assigned, Professor Dewey's functional theory of knowledge is the necessary consequence of a methodological principle applied to psychology; namely, that concepts used should designate something concretely identifiable in experience, not abstractions apart from that which serves for their empirical discovery. Sensations, or sense data, are condemned as not thus identifiable apart from the responses to which they lead and the ends such action serves.

The functional theory of the concept has, as I have tried to show elsewhere, other grounds, of a more purely logical sort. Viewed in this way, however, and apart from psychological considerations, it is not, I think, a simple consequence of the pragmatic test, but has a conceivable alternative, namely, immediatism or the presentation-theory of knowledge. By this logical approach, one has to adduce reasons for repudiating the conception that empirical knowledge—or some empirical knowledge—is immediately given, in order to reach the conception that activity and its issue are indispensable and characterizing factors in empirical cognition. The theory that meanings connote action and truth connotes prediction, is implicit in the notion that truth and meanings are something to be tested; hence, that they do not bring their own warrant in being simply given.

I believe we here arrive at a turning-point in pragmatic theory. On the one side, the pragmatic principle seems to stress the directly empirical. Put enough emphasis on that, and one might conceivably—though not validly, I think—arrive at a highly subjectivistic theory, of knowledge as immediate. On the other side, it stresses the limitation of meaning to what makes a verifiable difference, and of truth to what can be objectively tested. Follow out the consequences of that, and of the functional theory of knowledge which it implies, and I believe one is inevitably led to the doctrine that concepts are abstractions, in which the immediate is precisely that element which must be left out. To this point, I should like to adduce certain illustrations, drawn from contemporary science.

The new physics is, in good part, based upon certain applications of the pragmatic test. And to these physicists the validity of this methodological principle and the functional interpretation of conceptual meanings seem to be simply synonymous. One main premise of physical relativity is, of course, the impossibility of deciding which, of two bodies in relative motion, is at rest with respect to an absolute space. (We may remind ourselves that James's illustration

When this was written, Professor Burtt's paper, "Two Basic Issues in the Problem of Meaning and of Truth," contributed to Essays in Honor of John Dewey, had not yet come to hand. I note with pleasure that a part of his paper and part of what is here written run parallel.

of the pragmatic test-the man and the squirrel-is simply an example of the relativity of motion to frames of reference.) In elaborating the consequences of this relativity of motion, it became necessary to repudiate other absolutes, such as length, time, simultaneity, etc.; and this was done by identifying these with the actual modes by which they can be tested—the pragmatic test once more. The resultant methodology may be generalized in what Bridgman calls "the operational character of concepts." "We evidently know what we mean by a length if we can tell what the length of any and every object is, and for the physicist nothing more is required. the length of an object we have to perform certain physical operations. The concept of length is therefore fixed when the operations by which length is measured are fixed: that is, the concept of length involves as much as and nothing more than the set of operations by which length is determined. In general we mean by any concept nothing more than a set of operations; the concept is synonymous with the corresponding set of operations." 10

Why does the physicist thus identify his concepts with operations of testing? Is it because the properties he is concerned with are peculiarly those which are difficult or impossible of immediate apprehension? Not at all. Suppose a critic to observe: "But of course your concept of length goes back to an immediately given somewhat. You test the relation of a particular length to the yardstick, but unless your yardstick were an immediate so-longness, directly apprehended, your concept of length would be entirely empty." He will reply that this immediate so-longness has nothing to do with physics, because it can not be tested. The yardstick can be tested; as it happens, the measurement of it will differ for different relative motions. But any immediate so-longness of it is something which makes no difference to physics: if it had one so-longness to A and another for B, that would be unverifiable and ineffable. It is the significance of the operational character of concepts to extrude such ineffables from physics. Subjectively it may be that A and B both seem to themselves at rest in the center of the universe, directly apprehending certain so-longnesses, so-heavinesses, felt endurances of things, and what not. But physical position and motion are simply relations to a frame of reference, physical time a relation to clocks; physical properties in general consist in those operations and relations by which they are assigned and tested. The standards are absolutely standards—that is, arbitrary—but they are not absolute in any other The standard yardstick, or clock, or whatever, has its length or the measure of its seconds, etc., in an entirely similar and verifiable set of relations to other things, and only so. Any immediate

10 The Logic of Modern Physics, p. 5; italics are in the text.

content of the concept is extruded by the principle of the pragmatic test. If your hours, as felt, are twice as long as mine, your pounds twice as heavy, that makes no difference, which can be tested, in our assignment of physical properties to things. If it should thus make a difference in our predication of properties, we should at once decide that one of us must be mistaken. Such decision would reveal our implicit recognition that our concept of the predicated property excludes this subjective element, and includes only the objectively verifiable relations.

The physical concepts are not, by this extrusion of the immediate, emptied of meaning. Their meaning is, as Bridgman says, in the operations of verification and their results; it is contained in that complex network of relationships which constitute the laws and equations and physical predications of which the science consists. The concept is, thus, merely a sort of configuration or relational pattern. Whatever the immediate and ineffable content which is caught in that net may be—for John Jones or Mary Doe or anybody—it does not enter into the science of physics. The resultant conception of the content of the science is admirably expressed by Eddington: "We take as building material relations and relata. The relations unite the relata; the relata are the meeting points of the relations." The conceptual in knowledge is the element of pure structure or operational construction.

Thus the pragmatic test becomes a kind of law of intellectual parsimony, and leads, in science, to what might be called "the flight from the subjective." Physics is by no means an isolated example: the parallel thing has happened, or will happen, in every science, because it is simply the extrusion of what the science can not finally and conclusively test. Mathematics, being the oldest science, did it Geometry begins with rope-stretching and ends as the deductive elaboration of purely abstract concepts, the problem of the nature of space being handed over to physics and philosophy. metic begins with counting empirical things and ends in the logical structure of Principia Mathematica, for which the existence of the number 8 (for a certain type) requires an extraneous assumption. Just now mathematics threatens to go further and restrict itself to systems of operations upon marks. Psychology first got rid of the ineffable soul; a pragmatic psychologist then asked, "Does consciousness [as distinct from its content] exist?"; and now we have behaviorism, based on the methodological principle of restriction to what is objectively verifiable. If some of these movements go beyond what is necessary or valid, at least they exhibit the tendency, and the ground of it.

<sup>11</sup> The Nature of the Physical World, p. 230.

Professor Dewey seems to view such abstractionism in science as a sort of defect-sometimes necessary but always regrettable; an inadequacy of it to the fullness of experience. In various ways, it seems to him to threaten the relations between knowledge and life. Professor Eddington's book suggests that a doubt on this point besets him too when, as physical scientist, he finds himself also constrained to assess philosophical significances. That the world as experienced and life as lived are not going to be thrown out of the window, goes without saying. Particularly for Professor Dewey, it seems to me that this apprehensiveness is misplaced, because he has himself indicated the main considerations essential for the solution of the problem which results—the problem of the relation of abstract concepts to the concrete and directly empirical. Time does not permit attention to all the pertinent considerations. But I wish to suggest one which is important, by a final illustration, drawn once more from physics.

As an eventual result of subatomic and quantum phenomena, the new physics has abolished imaginable matter. Analysis of the physical emerges finally in something like Schrödinger's Ψ-functions, in mathematical expressions of probability, concrete representation of which can only be approached in terms of an admittedly fictitious sub-ether of variable dimensions. Immediately apprehensible matter dissolves into mathematics. Two other expressions of this same abstractness of the physically ultimate occur in Eddington's later chapters: one is that statement about relations and relata, already referred to; the other is to the effect that physics reduces the concrete object to pointer-readings.12 The elephant sliding down the grass slope is at once an immense flock of V-functions getting integrated, and a set of pointer-readings. The two interpretations do not seem interchangeable. Let us fasten on the pointer-readings. Why reduce the elephant to pointer-readings? In the first place, because physics can not deal with the elephant as a whole. It comprehends a good many-perhaps most-of the elephant's properties, but that he is, for example, a wonderful fine fellow and very intelligent, must be omitted from physical consideration. Let us call that organization of properties which physics can deal with "the physicist's elephant." Why is the physicist's elephant reduced to pointerreadings? First because, with the apparatus oriented upon the elephant, the elephant determines the pointer-readings. Second, because such pointer-readings are a conveniently hybrid sort of reality: the apparatus and pointers being physical, their readings correlate with the properties of the elephant; and the readings being numerical, they translate those properties into mathematical values.

<sup>12</sup> Pp. 251 ff.

significance of the pointer-readings is merely for the purpose of such The last state of the physicist's elephant, like the last translation. state of the electron, is in mathematical functions. But this last stage for the physicist is merely an intermediate stage of operations with respect to the elephant. The numerical values given by the pointer-readings are substituted for the variables in some mathematical equation expressing physical law. They thus determine a numerical value of some other mathematical function. This last can be translated back into something of the order of pointer-readings, and hence back into some other and previously undetermined property of the elephant-with the eventual result, perhaps, that we get the elephant safely into a box-car. Such eventual result is the reason for being of the whole set of operations. If it be asked, then, "Why reduce the elephant to mathematical functions?" the answer is that this is the best way known to man for getting him into the box-car.

The physicist's elephant is an abstraction, but a rather palpable sort of abstraction. All of him that the physicist finally deals with is what is common to the elephant and the pointer-readings; namely, a more abstract, a very abstract, configuration of relationships. This structure of relations is what, in general terms, the mathematical equations of physics express.

Thus if the last conceptual stage of the elephant—and of the physical in general—is in mathematics, or a set of relations of relata, it is not necessary to try to follow this transmogrification of the elephant, or of matter, with the imagination. Nor is it appropriate to cry shame upon the physicist for leaving the world of palpable elephants in favor of such unimaginable abstractions. The physicist's concept represents simply an intermediate stage in a process which begins and ends with elephants and such—not with the physicist's elephant even, but the one which slid down the bank and got put in the box-car.

As Professor Dewey points out, the physicist and mathematician simply take this intermediate stage off by itself and deal with it on its own account.<sup>13</sup> Thus if we reflect upon the functional theory of knowledge, I think we may come to the conclusion that there is no implication of it which is incompatible with the notion that concepts in general are abstractions—are even very thin abstractions. Because the function of concepts is not to photograph elephants but to get them into box-cars. Concepts represent simply that operational function of cognition by which it transforms the something given, with which it begins, into the something anticipated or something done, with which it ends. That they may have lost, or discarded as irrelevant, those elements of the concrete and immediate which char-

<sup>13</sup> See The Quest for Certainty, pp. 156 ff.

acterize direct perception and imagination, is nothing to the point. Goodness in a concept is not the degree of its verisimilitude to the given, but the degree of its effectiveness as an instrument of control. Perhaps Professor Dewey might even, with entire consistency, find less occasion to regret that the relatively undeveloped sciences of human affairs show a tendency to imitate this abstractness. When the social sciences attain that degree of abstractness, and consequent precision, which already characterizes physics and mathematics, perhaps they will have less trouble getting their social elephants into their social box-cars. Economics is the best developed of the social sciences, and a fair illustration.

To conclude: the fact that the pragmatic test seems, on the one hand, to demand that all meaning be found eventually in the empirical, and on the other, seems to induce a flight from the immediate and directly apprehensible into abstractions, is not, in reality, any contradiction or any difficulty. In one sense—that of connotation—a concept strictly comprises nothing but an abstract configuration of relations. In another sense—its denotation or empirical application—this meaning is vested in a process which characteristically begins with something given and ends with something done—in the operation which translates a presented datum into an instrument of prediction and control.

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#### BOOK REVIEWS

Die Auffassungen und Weiterbildungen der Schopenhauerschen Philosophie. Paul Salzsieder. Leipzig: Gustav Lunkenbein. 1928. 356 pp.

The question of the infiltration of Schopenhauer's ideas into modern thought has long been awaiting proper formulation and discussion. Salzsieder does not take up the problem in its entirety, but essays the less complicated task of tracing and critically evaluating only those philosophic ideas which specifically avow to be interpretations and developments of Schopenhauer's philosophy. There is no consideration of indirect influences or of systems similar to that of Schopenhauer in their conclusions but having their starting-points elsewhere. There is further no attempt made to throw light on the reasons for the late recognition of Schopenhauer's philosophy.

From Salzsieder's analysis it appears that Schopenhauer's proud claim of the organic unity of his system has been to a large extent challenged or denied. The several planks of his philosophy served as bases for the greatest variety of interpretations and continuations. To speak of a Schopenhaurian tradition or school is therefore mislanding.

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There have been in the main two interpretations. "The world is my idea" was the ground of the idealistic version of Herbart. Beneke, J. H. Fichte, Erdmann, Kuno Fischer, Deussen, and of several minor thinkers. "The world is my will" became the basis of the realistic interpretation of Frauenstädt and his followers. development of Schopenhaurian ideas, only the latter proved fruit-Toward the middle of the nineteenth century, the realistic emphasis on Schopenhauer's voluntarism became the foundation of a kaleidoscope of systems from E. von Hartmann's philosophy of the unconscious to Bilharz's ontrocentricism, from Bahnsen's and Mainländer's atheistic and pluralistic nihilism to Nietzsche's individualistic optimism, to mention only the more noteworthy continua-At the same time, interest in Schopenhauer's philosophy shifted from his epistemology to his metaphysics and with the beginning of the twentieth century, his irrationalism (Windelband, Volkelt) and Romanticism (Haym, Joël, Seilleire) receive particular emphasis.

Crucial for a critical evaluation of the various interpretations of Schopenhauer is the question whether his philosophy does or does not possess an organic or Gestalt-aspect. Salzsieder's position on this point is equivocal. On the one hand, he condemns the several interpretations on the ground that each only "brought into view the specific standpoint of the author, that therefore the historical Schopenhauer does not appear in any of the interpretations and developments" (p. 356). What that historical system was, Salzsieder indicates only vaguely and mainly by implication, characterizing it "a unity of Kant and Plato." On the other hand, he definitely denies (p. 271) that there is any connection between Schopenhauer's theory of knowledge and the rest of his system. And his conclusion is that "manifold and discordant as is Schopenhauer's personality, so many-colored is his philosophy" (p. 354).

Salzsieder's view of Schopenhauer's philosophy as largely a mosaic in which the parts do not blend, makes clear why in his treatment Schopenhauer's pessimism is almost totally ignored. where he discusses systems (Mainländer, Bahnsen, Nietzsche), in which pessimism became the central theme—and here his analysis and especially his criticism of this aspect is obviously impatient and unsympathetic—Salzsieder directs his attention to the interpretations and developments of Schopenhauer's epistemology and volun-His pessimism and the avenues of escape are slighted as if they were uncouth stepchildren who will not harmonize with the other members of the family.

In spite of some inconsistencies in Schopenhauer's philosophy it is questionable whether the view of its atomic character can be upheld. However, be that as it may, it is clear that pessimism does play a decisive rôle in the system. Schopenhauer himself regarded his philosophy an organic whole in which the idea of "die Sinnlosigkeit des Daseins" occupied a central position. This pessimism is obvious enough in the conception of the blind, irrational Will. which is the ground for endless yearnings and inevitable frustrations. Equally clear is the pessimism implicit in the various avenues of escape outlined in the last two books of The World as Will and Idea. But Schopenhauer's epistemology, too, is an argument for the condemnation of the empirical world; for the categories of space. time, and casuality are the principium individuationis or the veil of Maya which transform the realm of Reality into the dream world of shadows. If a similar epistemology served some idealists with the ground for postulating a transcendental universe of perfection (Platonic tradition) and other idealists with the basis for proving the spiritual value of the empirical world (Berkeley and his followers), Schopenhauer's original construction lies in his use of the same premises to reach reverse conclusions.

Salzsieder's undue emphasis on Schopenhauer's theory of knowledge and cosmology leads him further to question the interpretation of Schopenhauer as an irrationalist and as a Romanticist. He points to the "Kantian element" in the system by which he means the rational method employed. However, the reference of the interpreters is to the conclusion reached: the all-pervasiveness of the irrational Will that allows the intellect only the chance existence of a parasite. And this irrationalism has proved to be the source of a good deal of anti-intellectualism that has taken form in current "life-philosophies," occultisms, theosophies, and expressionisms. In challenging Schopenhauer's alleged Romanticism, Salzsieder again points to the difference between the rational method that the philosopher employs and the poetic approach of the Romanticists. This difference exists, but the fact remains that both reach the same conclusions with regard to the dream-nature of the empirical world. And the connection between them is even closer. The Romantic yearning for the unattainable which can obviously never be appeased offers a psychological basis for pessimism. And it is precisely the fact that, due to the Will, man is doomed to the eternal fate of Tantalus, that furnishes Schopenhauer with an argument for "the worst of all possible worlds."

oIn view of the pivotal position that pessimism occupies in Schopenhauer's system, it may be asked why it was relatively neglected in philosophic literature. We suggest as part explanation the dominance of the theologic tradition in philosophy that in one form or another argues for a beneficient Supreme Principle. Kant's

restoration of God in the second Critique, Hegel's symbolic-dialectical apology for Christianity and Schelling's ultimate adherence to the dogma of revelation, were the particular forces in the way of a doctrine that offered no salvation in or after life. The most frequent attacks that pessimism was subjected to, at the time when under the urbane leadership of E. von Hartmann it became a popular fancy, was from theologians.

But if Schopenhauer's avowed pessimism has not found a strong echo, more can be said for his implied pessimism. His avenues of escape: philosophic contemplation, the esthetic experience, sympathy, and asceticism are the gates through which philosophers and poets, cosmic humanitarians and saints, have fled from a life of active experience into a realm of passive contemplation. Implying the futility of change and action, these "solutions" offer a thin pale haven where modern romantic idealists seek refuge.

Salzsieder's treatise is noteworthy. It reveals clarity of objective and within the limits indicated, it is a competent study. But when Salzsieder fails to consider Schopenhauer's pessimism and romanticism, he is neglecting those aspects of his philosophy which have exerted an appeal, perhaps as mighty and certainly as fatal—even to philosophers—than has Schopenhauer's discussion of the relation between the subject and the object.

HARRY SLOCHOWER.

COLLEGE OF THE CITY OF NEW YORK.

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The Interpretation of Religion. John Baillie. New York: Charles Scribner's Sons. 1928. Pp. xv + 477.

Intimate familiarity with the history of philosophy and clarity of metaphysical insight, joined to sturdy confidence in the cosmic significance of religious experience, give interest both as a critical and constructive treatment to Professor Baillie's inquiry into the nature of religion. Following closely the Kantian tradition, the author's approach suggests that of the Scottish idealists. The distinction of its development usually saves the great quantity of historical material which is introduced, from becoming burdensome.

The earlier chapters are devoted to critical considerations having to do with methodology in the study of religion. The nature of theology is examined, and its use of speculative method. It appears to be the author's belief, in summary, that philosophy stands in the same relation to theology as to any of the special sciences. The task of theology is to investigate human religious experience, which subsequently may be incorporated into a synoptic view of reality by philosophy. From this it is implied that theology, so far as possible, must work without philosophic preconceptions, and

that philosophy must accept the data presented by such theology, just as it would accept the observations of physics or biology. The modern theologian should seek to understand, not a particular religious position, or to expound it alone, but religion, or the religious consciousness, as such. As the moralist finds the moral strivings of his race, so the theologian finds its religious quest "reflected in microcosm in his own soul's experience." Religion must not be studied merely speculatively, but from the inside, for only so can be reached the basis of that certainty which characterizes the history of religious thought. Yet this study must be universalized, so that not a specific religion alone, but religious consciousness, shall be the object of theological inquiry.

The latter two-thirds of the book is devoted to the inquiry itself into the nature of religion. An effort to analyze faith as a phenomenon of human experience is followed by critical examination of the rationalistic, romantic, and intuitional theories, and finally, by a consideration of the account of religion in terms of man's consciousness of value. The author finds that a common difficulty lies in the failure of most theories to recognize the intimacy of relationship which exists between moral and religious experience. He takes it as his thesis that "the kind of intelligent or rational insight in which religion takes its rise is none other than moral insight, and that faith in God is thus in some sort an outgrowth of our consciousness of value" (p. 257). The roots of religious faith lie deep in man's knowledge of good and evil, which is taken to rest upon insight into values possessing ultimate status in the cosmos. Revelations of religious truth do not shine from beyond the stars, but glow in living experiences of the good.

It will be apparent from even so brief a summary, that the approach of the book is essentially theological. To some, its presuppositions will be unsatisfactory, if not actually unintelligible. To those, on the other hand, who hold a theistic position, its positive argument and particularly its critical insight, will be of genuine interest.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES.

CLIFFORD BARRETT.

## JOURNALS AND NEW BOOKS

THE SYMPOSIUM. Vol. I, No. 2. Philosophy of Experiment: E. A. Singer, Jr. The Serpent's Enemy: Felix Morrow. The Dehumanization of Art: José Ortega y Gasset. Paul Valéry: P. B. Rice. On Defining Poetry: James Burnham. A Definition of Poetry: Louis Grudin.

REVUE D'HISTOIRE DE LA PHILOSOPHIE. 4° Année, Fasc. 1. Études cartésiennes. L'oisive adolescence de Descartes (1er article): G. Cantecor. Vers Novalis: C. Estève. Notes critiques sur le texte de l'"Éthique à Eudème": H. Margueritte.

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AUSTRALASIAN JOURNAL OF PSYCHOLOGY AND PHILOSOPHY. Vol. VIII, No. 1. The Beginnings of Philosophy in Australia and the Work of Henry Laurie (II): E. Morris Miller. Psychology Literature and Human Nature: C. F. Salmond. The Function of Intellect: H. Tasman Lovell. The Philosophy of Capitalism: R. B. Madgwick. Theory and Practice in Morals—A Rejoinder: T. A. Hunter.

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#### NOTES AND NEWS

Professor Edgar S. Brightman of Boston University delivered the first series of the Adams Lectures for 1930 at Bloomington, Indiana. The subject of the lectures was "The Problem of God" and they will be published soon in book form.

At the University of Virginia, Scott M. Buchanan has been promoted from Associate Professor to Professor of Philosophy and Charles M. Davenport from Acting Assistant to Assistant Professor of Philosophy.

The International Congress for Mental Hygiene, to be held May 5 to 10, at Washington, D. C., will be attended by many foreign delegates, some of which will be available for lecture engagements. Information may be obtained from Dr. George S. Stevenson, 370 Seventh Avenue, New York City.

At the meeting of the Philosophy Section of the Ohio College Association, April 3 and 4, at Ohio State University, the following officers were elected for the coming year: President: D. L. Evans, Secretary-treasurer, H. T. Houf; Adviser, T. B. Birch.

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Tolstoy's Esthetic Definition of Art. ISRAEL KNOX.

Report of the Twenty-ninth Meeting of the Eastern and Western Divisions of the American Philosophical Association.

HAROLD A. LARRABEE.

Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 4. February 13, 1930.

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The Meaning of Purpose. Y. H. KRIKORIAN.

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Volume XXVII. No. 5. February 27, 1930.

Methodology in Physics and Psychology with Philosophic Implications (II). L. E. AKELEY.

The Theory of Relativity: For What Is It a Disguise?

JAMES MACKAYE.

Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 6. March 13, 1930.

A Personal Impression of Contemporary German Philosophy.
SIDNEY HOOK.

Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 7. March 27, 1930.

Meanings and their Exemplifications. Charles A. Baylis. The Applicability of Logic to Existence. John Dewey. Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 8. April 10, 1930.

Concerning the Philosophical Consequences of the Theory of Relativity. F. S. C. NORTHROP.

Book Reviews. Journals and New Books. Notes and News.

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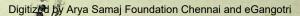
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MAY 8, 1930

## THE JOURNAL OF PHILOSOPHY

#### JOHN DEWEY'S THEORY OF JUDGMENT 1

EYNES opens his Formal Logic with the statement: "Logic may be defined as the science which investigates the principles of valid thought. Its object is to discuss the character of judgments regarded not as psychological phenomena but as expressing our knowledge and beliefs." It is clear from this that logic, though formal, does not intend to be inhuman. Though it is not concerned with the psychology of our judgments, it is nevertheless concerned with the judgments we make, with our "knowledge and beliefs." Now what is this judgment which is independent of our psychology, but yet, strangely enough, expresses our knowledge and beliefs? "Judgment proper," to quote Bradley of this time, "is the act which refers an ideal content to a reality beyond the act. A judgment says something about some fact or reality. A judgment must be true or false." Examples of judgment are "A is B," "I see my finger," or, to use the summary expression for all possible judgments, "S is P."

Logicians since the days of Bradley and Keynes are given more to using the term "proposition" than the term "judgment" for denoting the central fact of their science. Johnson begins his extensive treatise on logic by explaining and defending this change. "A systematic treatment of logic," says he, "must begin by regarding the proposition as the unit from which the whole body of logical principles may be developed. The natural use of the term "judgment'' is to denote an act or attitude or process which may constitute an incident in the mental history of an individual. As so conceived, we should have further to distinguish the changing phases of a process (which might alternately involve interrogation, doubt, tentative affirmation or negation) from the terminus of such process in which a final decision replaces the variations undergone during what is commonly called suspense of judgment. It would thus be more natural to speak of passing judgment upon a proposition proposed in thought, than to identify judgment as such with the proposition. . . . Now as regards the relation of the proposition to any such act as may be called judgment, my special contention is that the proposition can not usefully be defined in isolation, but only in con-

Read before the American Philosophical Association, Columbia University, Dec. 30, 1929; a few slight additions have been made.

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nection with some such attitude or act of thought; and I prefer to take the notion of asserting as central amongst these variations of attitude." And the proposition which judgment asserts is, to continue the quotation, "that of which truth and falsity can be significantly predicated." Johnson's examples of propositions have again the general form of S is P.

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In spite of metaphysical and terminological differences, Bradley and Johnson hold essentially the same views as to the nature of the central fact of logical science. And Johnson, like Bradley, like Keynes, and like all other logicians, affirms that "logic is most comprehensively and least controversially defined as the analysis and

criticism of thought."

Since thought is the universally accredited subject-matter of logic it is of the very first importance to find out what the analysis and criticism of thought involve. Clearly, they do not involve an analysis and criticism of the psychical experiences of the mind when reflectively thinking—an account of its erlebnisse. If this is what is meant by "psychological phenomena," then the realist contention is sound. But the process of reflective thinking has a logical structure as well as a psychical content and source. And the logician, if he is to take his task seriously, though he must not concern himself with the latter, must concern himself with analysing and explaining the former. That is, the logician must give an account of the procedure and technique of the mind in its reflective operations. And this is necessarily preliminary to any account he may wish to give of the nature and relations of the intellectual tools the mind employs.

Johnson admits as much in the passage quoted. He says, "The proposition cannot usefully be defined in isolation but only in connection with some act or attitude of thought"; and for his system he prefers "to take the notion of asserting as central amongst the variations of attitude, possible in judgment." Preferences where legitimate always claim respect. But is it legitimate to base a logical system on a preference? Dewey, as you all know, maintains that "interrogation, doubt, tentative affirmation" (to use Johnson's own expressions) are more centrally characteristic of judgment than is How can these rival claims be settled if logicians do not analyze the acts and attitudes of the mind when reflectively engaged! Does not, indeed, the mere statement of Johnson's preference presuppose on his part some sort of knowledge, if not analysis, of the nature of actual human thought? And it pre-supposes this in his capacity of logician for, on his own account, his logical system is developed from this preference or assumption. It is folly for the logician to think he can escape the necessity of inquiring into the form and content of human thinking by disparagingly calling such

inquiry "psychology." If it is psychology—in the sense meant by psychologists (which is more than highly questionable)—then, obviously, psychological analysis—whether logicians like it or not—is the necessary precondition of even the most formal kind of logical analysis.

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This issue is raised again, and the same conclusion is forced upon us when we consider another part of the citation from Johnson. Once more it is willingly granted that it is advantageous for Johnson to assume that judgment passes "upon a proposition proposed in thought," but again it must be asked, What warrant has he for this assumption? As is well known, Dewey claims that what is proposed in thought for judgment is not a proposition at all, but a problem. And a problem is not an object we cognize, but a state of affairs we experience in a variety of non-cognitive ways. How can logicians possibly determine which of these rival accounts is true, how can they ever possibly come to know what is actually proposed in thought for judgment unless, as logicians, they analyze the logical processes of the mind when it is forming and passing judgment? It bears repeating, that if this is psychology, then it is high time all logicians recognized that logic has its psychological foundations.

This summary disposal of so important an issue can not help but be unsatisfactory. But the issue is introduced here not so much for treatment as for use as an avenue of approach. It has enabled us, on the one hand, to state with the authority of quotation the premises on which idealist and realist logicians found their logical systems; and, on the other hand, to state with the strength of contrast, the premises of instrumental logic. These alternatives are distinguished from one another in no indifferent way. The character of our whole logical theory is determined by that set of premises we feel justified in taking. It would be an act of supererogation, if not of impertinence, for me to expound to you the consequences for logical theory of taking the alternative Dewey has developed and The task of this paper is not that of expatiating on the long familiar. Within the possibilities of this occasion, the task is to indicate rather how we may re-think afresh the consequences of the alternative idealist and realist logicians have taken, and to show how the results we will reach re-inforce the validity of Dewey's contention that his theory is a successful way out of the morass of contemporary logical problems.

Before proceeding further, it will be well to assemble what has been said so far about the two crucial features of Dewey's theory of judgment and their vital differences from rival theories. According to Dewey: (1) the original datum proposed for judgment is not a simple assertion, but a problem to be solved: (2) judgment is not

a simple assertion, a sawed-off act of the mind, a trigger-response to stimulus, but a complex process of inquiry, involving several types of mental activity—a process of weighing, discovering, estimating, assembling, testing, developing, analysing, and criticising facts and hypotheses contributory to the solution of the problem. It is judg-ing—the whole complex procedure of arriving at a definitive solution that is the essential epistemic element without relation to which, as Johnson himself rightly maintains, "the proposition can not usefully be defined"; the passing of the judgment—the assertion of the solution obtained—is merely, to quote Johnson again, "the terminus of such process." And this terminal act of reflection really falls, as we shall see, outside judgment proper.

It may sometimes be unimportant whether we take as our original datum the terminus of the process we are concerned with or take the whole process itself. But in logic and metaphysics this condition of happy immateriality does not, alas, obtain. What we take as our original datum makes all the difference in the world: the difference between clarity and confusion, between success and failure, between truth and falsity. The original datum of idealist and realist logicians is the proposition—the terminus of the process of judgment. The proposition is torn out of all context of origin and purpose in the process of human inquiry and made the object of a primary act of assertion. The central fact of logical science is treated as being determinate in content and final in form.<sup>2</sup>

The original datum of realist logic has a remarkably faithful parallel in the original datum of realist metaphysics. The sense-datum, too, is torn out of all context of origin and purpose in the process of human perception, and made the object of immediate sensory cognition. The central fact of metaphysical science is also treated as determinate in content and final in form. The sense-datum has the character and function in realist epistemology and metaphysics that the proposition has in realist logic.

Contemporary discussion has been more thorough and more fruitful in epistemology and metaphysics than in logic. Dewey especially has amassed a more forceful array of criticisms of the metaphysics of sense-data than he has of the logic of propositions. It will therefore be, I think, as valuable as it is interesting to adapt Dewey's criticisms of the former for the purposes of criticising the latter. To do this it will, of course, be necessary to consider realist

<sup>2</sup> This paper has chiefly in mind English philosophers. In so far as American idealists and realists hold views identical with those of their English brethren, the remarks apply also to them. As it is impossible within the limits of this paper to go into all the shades of American differences, I have been forced to make the English schools the direct, and when necessary the exclusive, objects of attention.

metaphysics and logic together. The task is large, but our treatment fortunately can be brief, since the fundamental issues and arguments are known to you all.

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Dewey has pointed out time and again that sense-data are not the originally "given" in perception, but the derivatively "taken" in reflection, that they are developed and used for their evidential They are not immediate intuitions of sense, but the highlyrefined products of thought. They are not the initial subjectmatter of thought, but the residual elements of its analysis. data are not isolated in their own existence, nor atomic in their They are isolated, when isolated, only in the intellectual uses to which they are put; and they are atomic, when atomic, only in the artificial sense that our investigations are most productive when we proceed step by step, when we employ the most elementary sense-data seriatim, or atomically, if you like. To summarize, in Loewenberg's excellent terminology, sense-data are primarily not pre-analytical, but post-analytical data. It is to be recognised, of course, that the post-analytical data of one inquiry may become the pre-analytical data for a subsequent inquiry. it is just this possibility and ever-recurring actuality that makes rational inquiry a continuous never-ending developmental process. Inquiry can grow and progress only as it uses attained results as the basis for further achievement. And it is as much a matter of growth and progress when attained results are used as data for more refined analysis of the starting point, as when they are used as "facts" for more extensive exploration of the subject-matter involved. dual procedure of constantly going back to re-analyse and revise first principles and of constantly going forward to discover new spheres of the subject-matter is the very life-blood of inquiry, the indispensable condition of its having a significant and fruitful career. Neither idealist nor realist logic can, without ignoring or distorting its own principles, account for these living features of scientific inquiry because neither logic treats of scientific method in its own natural matrix. It must, however, also be recognized—which is never done by idealist or realist—that when the post-analytical sensedata of one inquiry become the pre-analytical data of another inquiry, they by that fact lose their achieved intellectual status qua sense-data or objects of cognition, since they lose their evidential For instead of being instrumental to the solution of a problem, they now, by hypothesis, constitute the problem to be solved. And just as soon as sense-data set instead of solve a problem, they cease to be, in Dewey's technical terminology, objects of cognition, and have and become data of non-cognitive experience.

These criticisms of the metaphysics of sense-data have equal force

and validity when directed against the logic of propositions. The proposition is, by the realist, rent out of its natural context and treated as if it had an isolated existence; even the ideology of atomism is not wanting in propositional logic to make the parallel complete. The real isolation of the proposition, however, is like that of the sense-datum, an isolation, when isolated, in intellectual usewe sometimes find it best to deal with one proposition at a time; and, likewise, the proposition is atomic, when atomic, only in intellectual use-we always find it safest and easiest to deal with the simplest propositions we can obtain. We have already pointed out that the proposition is not the original subject-matter of thought, but the highly refined product of analysis. And what has been said about the possibility of sense-data functioning in one context as postanalytical and in another as pre-analytical data, applies without modification to propositions. To summarize again, instead of treating the proposition in relation to the process of inquiry of which it is the terminus—and in which relation it is alone properly understandable-idealist and realist logicians have treated the proposition as a self-sufficient entity isolated in its essential character, and sometimes even atomic; and instead of seeing the proposition as a product of intellectual construction they have seen it as a wraithlike courier from another world, a spectral evangel of a place better than any on earth.

From this way of viewing the proposition, derive all those problems and perplexities among which idealist and realist logicians flounder about, sorely assailed. The main problem that confronts them with forever new difficulties is that of truth; and to this problem consideration of time restricts us. With characteristic exactitude, the problem of truth is, as they say on the street, "the spittin" image" of the main problem the metaphysicians of sense-data are faced with—the problem of discovering what, precisely, the sensedatum is a sense-datum of, to what it is related and how.

The sense-datum is, by its metaphysicians, taken as the immediate object of sensory intuition, as a piece of "infallible knowledge," to use Whitehead's confessional expression. But like all "infallibilities" the sense-datum, too, alas, betrays the trusting mind. When so ordinary a sense-datum as the one we perceive when we look at our finger is scrutinized by a merciless analytic mind such as G. E. Moore pre-eminently possesses, its innocent appearance of being infallibly true is exposed as a sinful reality that is treacherously false. It is shown that at most the sense-datum gives us knowledge only of its own inconsequential self. It does not give us any knowledge, let alone infallible knowledge, of its relation to the finger it is presumably a sense-datum of; nor does it tell us whether it is part of the

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finger or part of the surface of the finger; nor even what relation it bears to either or both. The only shred of consolatory knowledge we can wrest from its mischievous infallibility is that in some sense some very peculiar Pickwickian sense—it bears some relation—some very peculiar Pickwickian relation—to the finger or part of the surface of the finger. This is a very inadequate account of even the most elementary form of this persisting problem. As you all know. for those metaphysicians of sense-data who are addicted to seeing double, or seeing sticks that are thoughtlessly left standing in ponds. the difficulties, unlike the images, multiply, in both number and severity, in a geometric ratio. In all the turmoil that ensues it is a strong philosopher indeed who can keep his head. For it is a cause of terrible disappointment, a source of deep disillusion, if not of fatal despair, to be at first buoyed up preternaturally by an "infallible knowledge" that quite soon lands you, no matter how ceremoniously, in a bottomless quagmire where no knowledge is to be found and where ignorance is not bliss. Small wonder some English philosophers have flung themselves headlong into the wily arms of dogmatic scepticism. Especially small wonder when we remember they have no animal faith as anodyne!

Now just as the realist metaphysician naïvely accepts the sensedatum as a piece of "infallible knowledge" and so starts on a journey of sorrow, so the realist logician as naïvely accepts the proposition as the bearer of eternal truth or falsity and starts on a similar journey. With equally increasing disillusion, and equally in vain, does he attempt to discover what, precisely, his proposition is a proposition of, what lies behind it, to what it corresponds and how.

Dewey's diagnosis of the ailment of sense-data metaphysics is, briefly, that far from immediate perception giving us "infallible knowledge" it gives us no knowledge whatever. Our senses are not organs of knowledge; perception is a non-cognitive relation we enter into with the things about us. On this doctrine of the non-cognitive character of perception stands or falls most of Dewey's other contributions—those of prognosis as well as diagnosis. When, therefore, we seek to carry Dewey's critical and constructive arguments in metaphysics over into the field of logic we would be leaving behind what is most vital if we did not take this doctrine with us. And we would be totally unworthy of the spirit his philosophy inspires, if we did not have the courage to say that the immediate intellectual apprehension of propositions is, no more than the immediate sensory perception of propositions is, no more than the immediate

diate sensory perception of sense-data, a case of knowledge.

If the immediate relation of the mind to propositions is not a knowledge-relation, what then do we know. The answer is as simple as the question is profound. We do not know propositions taken

individually and in isolation from their functional context—i.e., in their immediate relation to the mind; what we do know are propositions taken together in their relationships to one another and to the context in which their evidential value is developed and used—i.e., we know propositions in their mediate relation to the mind. We immediately apprehend propositions (as we do sense-data) in much the same way we apprehend a person by the arm or the throat. Sometimes we are mistaken or, as Dewey prefers to say, do mis-take; the person apprehended may look like the one we are after, but he may not have the same voice or the same fingerprints. But that he is not the person we want, we discover only after we have examined the person we apprehended; that is, only after we have made our apprehended datum the basis of analysis and investigation, only after we have converted the brute datum of experience into an object of knowledge.

In instances of error, everyone admits our apprehension is not a case of knowledge, no matter what we may have thought at the time; and in instances of correct apprehension, it is no more a case of knowledge, even though realists and idealists have erected logical systems to the vanity that causes most of us to say "We knew it was you all the time." This vanity, as you know, is the source of some of the most insuperable difficulties in these logics.

Propositions like sense-data, in their primary character, are had, not known. They are the termini of inquiry, the depositories of conclusions reached. They are the results of inference, not, in the first instance, factors in the process of inferring. The unit of thought has, as Dewey has shown, three fundamental phases or moments; it arises in non-cognitive experience, passes through an intermediary phase of judgment which alone is cognitive and finds its euthanasia in a return to non-cognitive experience. The proposition which is the terminus of the process of judgment belongs to the third non-cognitive phase. And, therefore, as we stated at the beginning, it falls outside judgment proper.<sup>3</sup>

It follows that if propositions which are the terminations of the process of judgment, the post-analytical data of inquiry, are not objects of knowledge, they also are not either true or false. This conclusion, though seemingly perhaps startling, is really not so—nor

s I would like to suggest that instead of proposition, the term "statement" be used. Etymologically and intrinsically it is a much superior term; it is void of the ambiguity of the term "proposition"; and its meaning is, predominantly, that of denoting or something to be denoted, rather than of asserting, or something to be asserted. It also gives us two pairs of symmetrical expressions—judgment and statement, and judging and stating. Judging clearly connotes a process; stating as clearly connotes an act. There are other advantages to be derived from this suggested change in terminology, but this is not the place to argue for it.

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is it altogether new. We have been repeatedly instructed in recent years that definitions and postulates are neither true nor false; and we have been told this by realists the most hardened of whom will admit that definitions and postulates are, by virtue of their own logical doctrine, also propositions. Now instead of making definitions and postulates exceptional, and creating a whole raft of inexplicable theories to explain why they are to be favored, it is the conclusion of this paper, to which the whole argument leads, that all propositions, as above defined, like definitions and postulates, are neither true nor false. Proof more than that implied in the foregoing is precluded now. Time does not allow either for anything more than this brief indication of the way out of contemporary logical problems Dewey's philosophy affords us. For it is also contended here that this conclusion only expresses rather more explicitly what is implicitly involved in Dewey's philosophy of the mind and epistemology as well as in his theory of judgment. this latter contention I may be wrong, but I do not believe I am because, as already stated, judgment, for Dewey, takes place within a non-cognitive context of experience, and is essentially hypothetical, in contrast to the judgment of the idealists and realists which takes place within an experiential vacuum and is essentially assertoric or categorical.

Since assertoric propositions in their primary character as termini of the process of judgment are neither true nor false, it remains that these predicates must be attributed solely to hypothetical judgments. And nothing so convincingly testifies to the validity of this conclusion as the realist logic itself. For that logic takes its propositional datum as being "either true or false"—and wherever we have "either—or" we have a hypothetical involved. Of course, this logic has no business to treat its propositional datum hypothetically because, as Johnson says, the proposition is, for it, the "terminus of the process of judgment"; and since in the process of judgment the hypothetical element is eliminated, the only proper attitude to be taken to the terminal proposition is "assertive" (or, as I would prefer to say, denotative or declarative). But the practice of treating the ing the conclusion of inquiry, independent of any context as the beginning for inquiry, of treating isolated termini of the process of judgment, as the original subject-matter for judgment—this practice in the original subject-matter for judgment—this practice is the original subject-matter for judgment is the original subjec tice is indeed the basic confusion of this logic—if we may single out one confusion as being more basic than another. And this confusion fusion does not diminish but increases in intensity as its consequences spread throughout the ramifications and complexities of the logic. It has its source in the fundamental contradiction Dewey has summed up in my up in The Quest for Certainty—a contradiction realism has in com-

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mon with the classic tradition which "asserted that knowledge is determined by the objective constitution of the universe. so only after it had first assumed that the universe is itself constituted after the pattern of reason." Whence the result that, although propositions are, in realist theory, derivatives of their corresponding subsistential facts or esssences, in practice they are made the determinants for the putative discovery of their correspondents and the criteria of their validity. Every realist is harassed by his professional obligation to find corresponding "eternal" facts or essences for propositions positive and negative, atomic and molecular, true and false. He is in much the same pathetic predicament as is the person who first accepts the doctrine that appearances in the physical world are all ectoplasmic manifestations, and then on the basis of this unwary acceptance, sets out to discover for every appearance he meets, a mediumistic or astral source. This pathetic predicament idealists and realists can escape only if they adopt the instrumentalist method of taking a hypothetical judgment in its functional context, considering it alone the object of knowledge or cognition, capable of either truth or falsity; and of taking the completed and isolated proposition as being a datum, even though not brute, of non-cognitive experience and therefore neither true nor false.

It has no doubt occurred to most if not all of you that if starting with "I see my finger" or "A is B" thrusts philosophers into ever more complicated difficulties, it is sheerest folly to persist in making such rash statements. They should, rather, start more modestly, exercising some of that intellectual restraint they extol as high virtue in the scientist. Everyone will grant that it is a perverse doctrine that starts with "infallible knowledge" and ends in questionable opinion and ignorance; and that it is a perverse method that can establish the validity of its arguments only at the cost of invalidating the source from which those very arguments are derived. Such a doctrine and such a method are an insult to the laws of scientific progress so firmly established. Philosophers should start with a question, with a hypothetical judgment instead of an assertoric proposition alleged to be eternally true. Questions bespeak problems, and problems, to be sure, bespeak difficulties for the philosopher. But these difficulties would be simpler and far easier to solve. Moreover, coming at the start, they would strengthen, not weaken and demoralize, the intellectual fibre. And once the difficulties are overcome, and the problems solved, the philosopher would then be able to announce with the confidence that is born of tested knowledge, the discovery of his eyes or mind. With the final statement, "I see my finger" or "A is B," he could rest from his weary labors and enjoy the laurels of victory hard won.

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To make problems and the method of their solution, instead of propositions and the method of their formal deployment, the subject-matter of logic, is no trivial change. The whole history of thought proves it is of utmost importance to get the right start. Definitions or formal propositions lead only to more definitions or more formal propositions as the Platonic dialogues and symbolic logic abundantly demonstrate; they give us no entrance into the real In the degree that we are exact logicians, we subject-matter itself. are forever boxed up in the narrow confines of our formal starting point; our method is rigidly restricted to unravelling dialectical implications—a stultifying occupation that always makes the mind quite vicious. Problems, on the contrary, lead us directly into the heart of the natural subject-matter, and the technique of investigation takes on the ample form of experimental method. Dialectic is kept on a leash, and the mind of man, free to find nourishment in the pastures of knowledge which contain only the salt of wonder, grows in wisdom and increases to the fulness of its power.

The metaphysics of sense-data, for all its initial forthright realism, comes, when developed, dangerously near being a variation in metaphysical idealism. G. E. Moore has to resuscitate Mill's vacuous doctrine of matter as the possibility of sensation—a doctrine that belongs with Spencer's Unknowable in the medical cabinet of philosophical abortions. And Russell's theory of perspectives, especially in the hands of Eddington, is as definite a return as one could maliciously desire to the idealism Moore and Russell started out to demolish. The realist logic of propositions is, likewise, in essential nature the idealistic logic over again. At the start, it was the same logic minus its super-idealistic head; but since Whitehead's God has been substituting for Bradley's Absolute it is minus that head no longer.

Finally, the claim of the symbolic branch of realist logic that it is a genuine departure from the Aristotelian mold, is unfounded. Symbolic logic, like Aristotelian logic, takes the finished statement, the terminal proposition, as its datum; and any logic that does this, is in its major features essentially like any other logic that does this; and symbolic logic, like the ancestor it denies, concerns itself solely with dialectical implications. Because symbolic logic has a wider range of implications and relations than the syllogistic ones, does not make it non-Aristotelian. Symbolic logic is certainly an advance on Aristotelian logic; but it is an advance on the same road with the same type of logical army. Instrumental logic, on the other hand, is, as we have tried to show, a new type of logic. Although it has it is none the less a new line of advance with a new set of ideas on a

new road that it has broken into service for the greater glory of logic and the greater benefit of mankind.

JOSEPH RATNER

NEW YORK CITY.

#### EXPERIENCE AND DIALECTIC 1

RVEN a misguided comment on Professor Dewey's philosophy may be instructive. Opinions have a social as well as an individual character, with the obvious consequence that one man's understanding of another is at least one instance of how that other is understood. Otherwise, why should we comment on great philosophers, and tell the world what they thought, when they have already told the world themselves? In the present case, malice could suggest that a philosophy should be defined and judged in terms of the effects it produces, but malice would be confused if confronted with a multiplicity of effects, and might find the criterion that a philosophy is what it is experienced to be, forcing it, in the interest of justice, to distinguish between appearance and reality. A commentator is embarrassed in making the distinction, for what he finds the philosophy to be is what he concludes it to be. His commentary is, then, at least as instructive as personal revelations usually are. He exhibits himself. He is an appearance. If the reality, as it may very well do, mocks him, that is the penalty of being an appearance, and, perhaps, some justification for being it, some evidence that the reality is antecedent to the appearance and should control it. Haunted by this perplexing circumstance, I proceed with this paper. I shall state what I have to say in summary at the beginning, and then illustrate it in two particulars.

Professor Dewey has had an eminently practical effect. profoundly influenced the way many people think and act and teach. When his writings are stripped of dialectic and controversy, and freed from contact with certain of the traditional problems of philosophy, there remains a positive and substantial pronouncement on human life in its immediate practical character. This pronouncement has had on many minds the effect of a genuine liberation from obstacles which warped their thinking and clogged their action. It proposes to substitute courage for uncertainty and hopefulness for That is a very practical substitution. Certainty, or the claim of it, might have been offered as the substitute for uncertainty, and courage might have been offered as the substitute for fear. however, is not what the pronouncement offers. The soul is not to be cured of uncertainty and fear by becoming certain and courage

<sup>1</sup> Read at the meeting of the American Philosophical Association in New York, December 30, 1929.

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It is to be made immune to its vices by means of a revised alignment of opposites, an alignment revised in view of the exigencies of living. The shift involved is naturally described as a shift from the theoretical to the practical. And I suspect that the major difficulties found in construing the philosophy of Professor Dewey arise from attempts to justify that shift on theoretical grounds. difficult for me to think that Professor Dewey himself does not attempt to provide such a justification. I find this less in what he affirms than in what he denies. His affirmations impress me as keeping close to a progressive development of a central theme. denials, however, often impress me as requiring the acceptance of the opposite of what is denied as the ultimate theoretical ground which supports the practical affirmations. I seem at times to be asked to substitute courage for certainty on the ground that there is no certainty, and hopefulness for fear on the ground that there is nothing of which to be afraid. In such moments I find myself involved in a dialectic of theories of knowledge and existence. I become myself a controversialist, and find myself leaving the solid ground of experience.

There are two sentences in Experience and Nature 2 which express concisely and without controversial implications that pronouncement on human life to which I have referred. They are these: "Because intelligence is critical method applied to goods of belief, appreciation, and conduct, so as to construct freer and more secure goods, turning assent and assertion into free communication and sharable meanings, turning feeling into ordered and liberal sense, turning reaction into response, it is the reasonable object of our deepest faith and loyalty, the stay and support of all reasonable hopes. . . . What the method of intelligence, thoughtful valuation, will accomplish, if once it be tried, is for the result of trial to determine." I have said that these sentences are without controversial implications. They receive, moreover, in Professor Dewey's manifold expansion of them, an emphasis which puts them in a position of philosophical dignity. They are not left without an expert analysis which aims to make them of primary importance, and to exhibit their entire independence of any attitude which can be defined as antecedent or more fundamental. This analysis, when freed from dialectical and controversial entanglements, impresses me as wholly convincing. The attempt to bring intelligence to bear on life in the manner described, is an attempt which is, and can be, made, without first having solved any antecedent problem whatever. Least of all does it wait on the solution of such problems as the existence of God, immortality, freedom versus necessity, mechanism

<sup>&</sup>lt;sup>2</sup> Pp. 436-437.

versus teleology, and the like. Problems do not exist to be solved before we can live: they arise in the process of living, and in that process are solved and resolved. Professor Dewey has driven that fact home with untiring persistence; and he has made that fact the starting-point of all fruitful thinking. As a consequence, he has made many of us intolerant of any other attitude. He has made it quite impossible for many of us to believe that life can generate any problem the solution of which would be life's undoing. And he has made this impossible because he has shown us in a wholly convincing manner that if we are to philosophize profitably we must begin with the concrete operations of intelligence as these promote more satisfactory living, and not with some antecedent scheme of things which is supposed to explain or justify these operations. with its exigencies is fundamental, and this fundamental can not be explained by any solution of life's problems, nor deduced from any system of things which our ingenuity may devise. Whatever one thinks of all this, it is a very definite and a clearly intelligible philosophy. And it is natural for it to recommend courage in the face of uncertainty and hopefulness in the face of fear.

It is natural, too, perhaps, that among its analyses it should give a prominent and even a distinctive place to the analysis of reflective thinking and the operation of ideas. Its premise, it may be said, forces it to look upon thinking as inquiry, and upon ideas as the intellectual instruments of inquiry which find their validity in what they effect or accomplish. Here is a thesis which can stand on its own bottom. It seems to be a major thesis of Professor Dewey, which he uses to frame a logic of practice, to give moral tone to actions, and to humanize education. In his development of it, however, he seems to me to support it far less by an appeal to its natural source, than by using it dialectically to confound every analysis of knowledge which implies an antecedent reality to which intelligence must conform in its operations if it is to be successful. the question I would raise here is not whether there is such an antecedent reality, nor whether there are grounds for believing that there is. Such questions, like Professor Dewey's major thesis, seem to me to stand on their own bottom. Surely we can ask with as complete intelligibility as we can ask any question, whether or not reflective thinking implies an antecedent reality to which knowledge must conform to be successful. It is a question to be settled by inquiry fully as much as any other. make it a wholly illegitimate question, and to read the whole history of philosophy down to very recent times as if it were vitiated by attempted answers to this question, give to Professor Dewey's thesis a character extraordinarily difficult to construe.

the question is not whether there are objects antecedent to knowledge to which knowledge must conform to be successful. tion is, rather, whether Professor Dewey's thesis would be vitiated in proportion as one believed in such objects and operated accordingly, and whether, if there were such objects, that thesis would be wholly destroyed? I ask the question because I have failed to discover that the existence or non-existence of such objects has anything to do with the essential character of the thesis. I can not find that the problem of their existence has to be settled first, before validity can be claimed for the thesis. Yet I am forced to believe that Professor Dewey thinks that such a settlement is essential. As I follow his settlement, I find myself in a dialectic which sets antecedent objects over against eventual objects to the confounding of both.

To be more specific, in The Quest for Certainty 3 Professor Dewey says in italics, "only the conclusion of reflective inquiry is known." This forces me to reply, "The conclusion of reflective inquiry is currently said to be knowledge; am I then to identify knowledge with the known." If I do this, I am thrown into the arms of the idealists, whose embrace I dislike. So I distinguish between knowledge and its object; I conceive the object to exist prior to its being Then I am confronted with the charge that this robs know-To avoid this I must recognize that objects ing of practical efficacy. of knowledge exist only after the act of knowing; they are eventual That there are eventual objects after the act of knowing, and that, unless there are such objects, the act of knowing is futile, are propositions which are for me both clear and acceptable. if any objects whatever are known, it seems to me to be irrelevant whether they exist prior or subsequent to the act of knowing. knowing eventuates in is a known object. I suppose no one disputes that, at least no one disputes it so far as the intent of knowledge is If that eventuation is made to depend on the prior settlement of the problem of antecedent as against eventual object, I can see nothing left but a dialectic which settles nothing. see, however, that an analysis of knowing as a concrete operation with subject-matter, makes such a dialectic quite unnecessary. then, play eventual objects over against primary subject-matter, making of the former reconstructions of the latter, and making these reconstructions the objects of knowledge? I am quite ready to agree that it is the important business of knowing so to deal with subjectmatter that more satisfactory objects are substituted for less satisfactory factory, and that, thereby, greater security, control, and happiness are secured; but I fail to see how this warrants the statement that only the conclusion of reflective inquiry is known. That statement seems to me to come from another source. To find that source I am

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driven back on Professor Dewey's dialectical and controversial arguments. These drive me, in spite of all he says, to try to frame some conception of existence which is wholly independent of the act of knowing, and yet the justification of that act and the source of its efficacy. Yet this seems to be precisely what I am forbidden to do by the dialectic.

The matter may be made still more specific. In the chapter on "The Seat of Intellectual Authority" in The Quest for Certainty, Professor Dewey uses the example of a physician called in to diagnose the disease of a patient. He has the physician do what a physician would do, examine the patient and bring to bear his medical knowledge on the case. But the whole discussion drives me to ask: Must we conclude that it is only after the physician has found out what is the matter with the patient that the patient has anything the matter with him? So to conclude would be to caricature. Is, I venture to ask, the caricature only the result of the reader's stupidity, or is it the result of being forced to decide whether antecedents or consequents are the objects known? One must ask: Do what things are and the ways they operate depend on the eventuation of inquiry? Must we conclude that they do so depend because intelligence does, as a matter of fact, participate in the order of events, and so operate that more satisfactory objects are substituted for less satisfactory? Is this caricature? What saves us from the confusion here involved except a metaphysics of the kind which the dialectic of prior and eventual objects tends to destroy?

The questions are not asked to try to convict Professor Dewey of contradiction. They are asked because one reader at least finds no clue to an answer to them except in the dialectic, and that clue leaves him in the dialectic. The best he can do is to conclude that existence is essentially dialectical, and that the dialectic is incidentally resolved by the practical operations of intelligence. may be a sound conclusion. If, now, we try to settle the question whether it is or not, we discover in ourselves a close intellectual kinship with Plato, Aristotle, Spinoza, Locke, Kant, Hegel, and all that array of names which the history of philosophy holds up for admiration.

Again I take sentences from Experience and Nature.4 "A naturalistic metaphysics is bound to consider reflection itself a natural event, occurring within nature because of traits of the latter. . . . The world must actually be such as to generate ignorance and inquiry, doubt and hypothesis, trial and temporal conclusions. . . . The ultimate evidence of genuine hazard, contingency, irregularity, and indeterminateness in nature is thus found in the occurrence of

<sup>4</sup> Pp. 68-70.

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thinking. The traits of natural existence which generate the fears and adorations of superstitious barbarians, generate the scientific procedures of disciplined civilization." Sentences like these abound in Professor Dewey's writings. They impress me as being fully as characteristic of his philosophy as the instrumental doctrine of intelligence. At times, they impress me as more characteristic, because they define an attitude from which instrumentalism may be derived, but which itself is not derived from instrumentalism. It is a challenging attitude which nowhere else in my reading have I found so vigorously set forth.

It is not unusual among philosophies to be what is called anthropomorphic. It is very unusual, however, to be that in Professor Dewey's sense. There is a vast difference between constructing nature out of human traits and finding in human traits clues for inferences regarding what nature is. According to Professor Dewey's attitude, we are just as much forbidden to put man over against nature as an ultimate contrast as we are forbidden to put the sun, the moon, or the stars, over against it as such a contrast. If the latter are good grounds for inference, so also is man, and every part of man's make-up and activity.

I dislike to leave this feature of Professor Dewey's philosophy with so bare a statement of it. The importance of it is so great that it deserves far more attention than it has received. It involves an attitude difficult to describe by those pet isms with which we philosophers love to deal, and in which we think we feel at home. "nature" is a very troublesome word. One thing, however, seems clear. Limited by our location and by our length of days, we do try to form some conception of that context within which we ourselves are so evidently incidents. "Nature" may not be that context; it may be only a part of it; but who is going to decide for us all? we let a word cramp the challenging significance of an utterance which affirms that man, when he tries to pass beyond the limits of the evident situation in which he finds himself, must not neglect anything within that situation? Let us, then, for the present at least, accept "nature" as the name for that which includes us as events within itself. What, then, is nature like? The answer is, it is, in some measure at least, like what we are. If we are unstable, there is instability in it; if we are contradictory, there is contradiction in it; if we are hopeful, there is possibility—one might dare to say, hope in it; if we err, there is something like error in it; if we are incomplete, there is incompleteness in it. And all this does not mean that we are the exclusive instances of all such traits of nature. We are samples of them. In short, man is a sample of nature, and just as good a sample as the solar system or an atom. Consequently, we should never suppose that the latter afford better grounds for inferring what nature is like than the former affords. Here is a road which philosophers rarely travel with unencumbering luggage.

The acceptance or rejection of this conception of nature is not here in question. Nor is the method by which it is approached These matters are left to the disputatious. The thing that troubles me is the limitation which Professor Dewey seems to put upon what we are entitled to infer from the samples of nature which we may study and analyze. Clearly man is not the only sample. the solar system also, and, if not the atom, at least that which admits an atomic theory. Why, then, should inference to anything permanent and unchanging be forbidden? Such inferences may be unsound, but they suggest themselves repeatedly as we explore the varied samples of nature. I do not find, however, that Professor Dewey rejects them because there is not evidence for them. seems, rather, to argue them into illegitimacy. The ground of the argument seems to be, I repeat, not lack of evidence; it seems, rather, to be the conviction that any recognition of the permanently fixed or unchanging is bad. It implies a disastrous preference. Quest for Certainty seems to me to read the history of philosophy in terms of that disaster, and to turn that history into an argument against the recognition of anything but relative permanency. in Experience and Nature 5 we read: "One doctrine finds structure in a framework of ideal forms, the other finds it in matter. agree in supposing that structure has some superlative reality. supposition is another form taken by preference for the stable over the precarious and incompleted." Are we to conclude, therefore, that to avoid disaster, we must take a preference for the precarious and incompleted? Why is one preference better than the other, and why should the question be one of taking preference at all? get no answer in terms of evidence of the same kind that warrants the emphasis on change. I get a dialectical answer, as if dialectic, and not the method by which nature is inferred, is to decide what inferences are to be admitted. And when I examine the dialectic, I find it motivated by the insistent claim that the recognition of the permanent gives it a metaphysical superiority to the changing. makes it possible to play the one off against the other in the interest of proving that the permanent is but the relatively stable in a nature which is change through and through.

Now nature may be just that. I am not questioning that conception of what nature is. I am only pointing out that I find that conception supported finally, not by empirical evidence, but by a dialectical argument. That, again, may be the way to support it. If it is, then I am forced to conclude that dialectic is a better sample

of nature's processes than any other. This also may be true. Then, to consider its truth, I find myself owning kinship with Heraclitus and Parmenides and their illustrious followers. I must carry the debate into that atmosphere; and when I do, I find no help whatever in terms of that practical procedure which marks the development of securer knowledge.

Such are the two illustrations I venture to give of the general statement I made in the beginning of this paper. They represent a conclusion I am led to by reading the writing of Professor Dewey. It is what his philosophy ultimately looks like in my own mind: a philosophy with a doctrine of experience and nature which admits of a positive and progressive development in its own terms, which stands, as I have said, on its own bottom; but which, in spite of this. is made to depend on a dialectic which runs back in the history of philosophy very far indeed. We should expect, as I see it, a metaphysics which is wholly inferential. We have, instead, a metaphysics which is a matter of preference. And this preference—we may even say that the empirical fact of preference—implies that nature is essentially dialectical, and that one way, at least, by which the dialectic is incidentally obviated, is through the practical procedure Experience appears to be, therefore, not something of intelligence. which is justified by its fruits, but which is justified by a dialectic which determines what experience is like.

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#### IN REPLY TO SOME CRITICISMS 1

I T is inevitable, on an occasion like this, that the adverse criticisms be selected for discussion and reply. This fact gives an unduly controversial character to this article. So I wish to begin by expressing my grateful appreciation of not only the attention given by critics to my thought, but especially of their considerate tone, and their words of generous recognition of some value in my thinking.

I

There are, I take it, two main points and one that is subsidiary, in the article by Professor Woodbridge. Of the main points, one concerns the attitude taken by me toward the antecedents and the consequents of reflection with respect to objects of knowledge; the

<sup>1</sup> See the articles read at the meeting of the American Philosophical Association, New York, December, 1929, by Prof. W. E. Hocking ("Action and Certainty"), and Prof. C. I. Lewis ("Pragmatism and Current Thought"), Prof. F. J. E. Woodbridge, which appears in this issue.

other concerns the method by which my position is reached—Mr. Woodbridge conceiving it to be purely dialectical and not, as I have maintained and believe, empirical. The point that seems to me subsidiary, deals with the place of the permanent and the changing in existence. With regard to this problem also, Professor Woodbridge believes that I reach my position by dialectic rather than derive it from experience.

Although Mr. Woodbridge's two main points are related to each other, it will be better to consider the question of the nature of the antecedents and consequents of reflection first and independently of the question of method, because I find attributed to me a somewhat different view from that which I hold. Perhaps the difference in view may be most directly approached through the instance of the patient and the physician (employed by me) to which Mr. Woodbridge refers. I began the discussion of this illustration with the statement, "it is evident that the presence of a man who is ill is the 'given.'" Then I went on to say that this "given" is not as such a case of knowledge at all; the particular point I was making being that the given in the sense of data of knowledge is the product of reflective analysis of that which is given or had in direct perceptual experience, and which, as such, is not a case of knowledge. Moreover, data for knowledge when once arrived at, define the problem, and hence are not identical with the object of knowledge. As I said, in the context referred to, "The original perception furnishes the problem for knowing; it is something to be known not an object of knowing." But, as I also tried to show, the original experience does not furnish the problem in the sense of constituting it in a defined way; the resolution of the experience into those particulars called data accomplishes this task. The patient having something the matter with him is antecedent; but being ill (having the experience of illness) is not the same as being an object of knowledge; it is identical, when the further experience had by the physician supervenes, with having a subject-matter to be known, to be investigated. If the distinctions (upon which I have insisted at considerable length) between something had in experience and the object known, between this something and data of knowledge, and between the data and the final object of knowledge, be noted, I do not understand why any one should think I was denying the existence of antecedent things or should suppose that the object of knowledge as I conceive it does away with antecedent existences. trary, the object of knowledge is, according to my theory, a re-disposition of the antecedent existences. After quoting a statement of mine that "only the conclusion of reflective inquiry is known" Mr. Woodbridge goes on to say, "I conceive the object to exist prior to

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its being known." I, too, conceive that things had in direct experience exist prior to being known. But I deny the identity of things had in direct experience with the object of knowledge qua object of knowledge. Things that are had in experience exist prior to reflection and its eventuation in an object of knowledge; but the latter, as such, is a deliberately effected re-arrangement or re-disposition, by means of overt operations, of such antecedent existences. The difference between Mr. Woodbridge and myself, as I see it, is not that he believes in the existence of things antecedent to knowledge and I do not; we differ in our beliefs as to what the character of the antecedent existences with respect to knowledge is. While Mr. Woodbridge says "the object exists prior to its being known," I say that "the object" is the eventual product of reflection, the prior or antecedent existences being subject-matter for knowledge, not the objects of knowledge at all.

The foregoing remarks are not intended, of course, to prove that my position is correct, they are meant to show what the position is. The question of correctness brings up the question of the method by which is reached the conclusion that the object consequent on reflective inquiry differs from the antecedently experienced existences, since it is their re-disposition. Mr. Woodbridge thinks that the method is purely dialectical, not empirical. Now, of course, I employ dialectic. I do not suppose that any one could write on philosophy without using it. If I could take the reader by the hand and lead him to see the same things I think I see and have the same experience I have, I would do it. Short of that possibility, I use dialectic. But this is so obvious, it can not be what Mr. Woodbridge objects to. As far as I can make out, the objectionable dialectic consists in laying it down as a premiss that knowledge must have practical efficacy, and then arguing from this premiss to the conclusion that the object of knowledge must differ from what exists antecedent to knowing. If I had been guilty of this practice I should agree with Mr. Woodbridge's criticisms.

As matter of fact, however, I have depended upon empirical evidence. The evidence which I have cited at considerable length, running, in fact, through several chapters, is drawn from the experimental sciences. The argument may be stated in a simple way. The sciences of natural existence are not content to regard anything as an object of knowledge—in its emphatic differential sense—except when the object in question is reached by experimental methods. These experimental methods involve overt operations which re-dispose the existences antecedently had in experience. Q.E.D. Dialectic is used, of course, but it is used in order to invite the reader to experience the empirical procedure of experimental inquiry and then

draw his own conclusion. If I am wrong, it is because my empirical analysis is wrong. I regret that none of my critics offered his own interpretation of experimental knowledge and its object. In any case, the practical efficacy of reflective thought (rather than of knowledge) is the conclusion of my empirical analysis, not the premiss of a dialectic.

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I have called the criticism regarding my preference for the changing over the immutably fixed, subsidiary. This is because it does not seem to be so important in the criticism nor so well estab. lished as that just dealt with. In one respect, my argument on this point is frankly dialectical. The history of thought seems to me to disclose that the belief in immutable existence is an emotional preference dialectically supported. Dialectic is obviously in place in dealing with a position as far as that is itself dialectical. case, I have not meant to deny the theory of immutable substances because it is "bad," although it is pertinent to the dialectic to point out that bad consequences have resulted in morals and natural science from its assumption. In addition to this negative reason, derived from dialectic, I find a positive reason in the history of science for my hypothesis that the difference between the apparently permanently permanent and the obviously changing is one of tempo For science seems to have moved constantly away or rate of change. from acceptance of everlasting unchangeable elements. tinually increasing emphasis upon interaction seems to be compatible empirically only with the fact that things are modified in their interactions. While, then, I would not call the hypothesis in question proved, it appears to me more reasonable than the contrary doctrine.

#### TT

To reply adequately to the points raised by Professor Hocking would involve a substantial statement of my theory of meaning and truth. Consequently, I am compelled to engage in a series of rather summary remarks.

1. In arguing for the non-correspondence of meaning and working, Mr. Hocking says "if we only know a thing when we see what comes of it, then indeed we can never know anything; for we never have in hand what is yet to eventuate." For, as he points out, when ideas are taken as plans of action, they develop later into other plans not even contemplated, much less in process of execution, when the idea was originally conceived. This is an objection which is natural when truth is conceived of as an inherent property of some meanings, ideas, or propositions. By converting my position in terms of his own, Mr. Hocking naturally finds my position unsatisfactory. But if it is taken in its own terms, it is seen that any idea

or proposition is relevant to its own problematic situation in which it arises and which it intends to resolve. As far as it does resolve it, it is validated or is "true." This resolved situation may produce another situation that then requires to be resolved, a further meaning and further truth, and so on. There is continuity between these different situations, in so far as the subject-matter is continuous. Looking back, it is easy to suppose that there was a single idea or meaning (like that of freedom in Mr. Hocking's illustrations) which has remained identical through a series of partial realizations. this retrospective survey and the meaning it yields is always in fact -according to my conception-a new meaning arrived at in dealing with a new empirical situation.2 Without going into detail, I would say that much of Professor Hocking's argument and illustrations (the case of the lover, radio-activity, etc.) seems to me to rest on an identification of truth with meaning which is necessary from his point of view, but which is denied from mine. What he calls "halftruths," "partial-truths," are from my point of view meanings in process of development; the question of truth arises only when the question of experimental verification enters in. Part of the meaning may be verified, but such verification is not a half-truth; it is the whole truth of that part of the meaning.

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2. The same line of argument applies to the question of the immediacy of truth. There is a sense in which truth, as the solution of problems, is immediate; it is the same sense in which a solution when it is arrived at is immediate; it immediately exists. But it is arrived at through mediation or reflection involving operations; it is, in good Hegelian language, a mediated immediacy. What is denied is that meanings, apart from their application through operations, are more than claims to truth. More specifically, what is denied is that immediate properties, such as clearness, so-called self-evidence, etc. (the properties insisted upon by the rationalistic schools as marks of truth) are more than properties of meanings.

3. It is an old story that "eternal" is an ambiguous word. It means both irrelevancy to time and enduring through all time. Taking the word in the latter sense as Professor Hocking's argument seems to require, I should say that stability of truth, like "reality" as defined by C. S. Peirce, represents a limit. Of course we want truths to be as stable as they can be. That is to say, we want meanings which have been confirmed in a comprehensive variety of empirical situations and that accordingly offer us the promise of further applications. What is objected to is the conversion of this ideal limit into an inherent and antecedent property

<sup>&</sup>lt;sup>2</sup> In connection with this point I would call especial attention to the argument against the agnostic inference that Mr. Hocking draws from my theory which is found on pp. 192–194 and elsewhere in The Quest for Certainty.

of meanings. Such conversion appears to me the essence of dogmatism. And some of Mr. Hocking's illustrations in exemplifying such dogmatisms, also exemplify, to my mind, the objectionableness of the conversion of an ideal limit into an eternal truth. These fixed dogmas work, of course, but I can not share—taking the light of history as a guide that reveals the way in which they have worked —Mr. Hocking's enthusiasm for the "absolute as a battle-ax." The fixed truths of paranoiacs also work—but rather disastrously.

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4. That there are a priori meanings in an empirical sense. I have never denied or doubted. It is the nature of a genuine meaning to be prospective and thus temporally a priori. nature and function of these meanings are clarified they form what may be called postulates. The value of postulates in science is undoubted. The conversion of meanings-as-postulates into truths. already alluded to, is, once more, natural in the philosophy of Mr. Hocking, but from my point of view it is fallacious. I would have postulates recognized for what they are and not frozen into dogmatic The assertion that "necessary consequences can be perceived and evaluated in advance" rests, to my mind, on an ambiguity in the term "necessary consequences." It may signify either logical implications or existential outcomes. The fallacy of such ethics as the Kantian, consists, as I see it, in supposing that the former is identical with the latter, or that the latter ought to be identical with It therefore leads to a rigidity which is favorable not only to dogmatism in thought, but to fanaticism in action: since the consequences follow logically from the principle they must be right and must be fought for at all costs. Experience seems to me to testify to the need of an ethics more humble toward existential consequences. Such humility is quite consistent with firm attachment to hypotheses that have had a wide confirmation in the history of the race and of the individual, provided pains are taken to examine the relation between the hypothesis and its consequences so as to give assurance that the latter are genuine confirmations. value of trying to realize value" is such a hypothesis—provided one join with it (or interpret it as) a constantly renewed endeavor at "discovering the possibilities of the actual."

I recognize the quite summary character of these comments. But as I said at the outset, Mr. Hocking's points raise a large number of fundamental issues in logic and morals, and to do justice to them would require not a few paragraphs, but a treatise.

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#### III

I find myself in such sympathy with the article of Mr. Lewis that I shall confine my comment upon it to one minor point. He

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Lewis t. He says "Professor Dewey seems to view such abstractionism in science as a sort of defect—something necessary, but always regrettable; an inadequacy of it to the fullness of experience." I fear that on occasion I may so have written as to give this impression. I am glad, therefore, to have the opportunity of saying that this is not my actual position. Abstraction is the heart of thought; there is no way-other than accident—to control and enrich concrete experience except through an intermediate flight of thought with conceptions. relations, abstracta. What I regret is the tendency to erect the abstractions into complete and self-subsistent things, or into a kind of superior Being. I wish to agree also with Mr. Lewis that the need of the social sciences at present is precisely such abstractions as will get their unwieldy elephants into box-cars that will move on rails arrived at by other abstractions. What is to be regretted is, to my mind, the tendency of many inquirers in the field of human affairs to be over-awed by the abstractions of the physical sciences and hence to fail to develop the conceptions or abstractions appropriate to their own subject-matter.

In conclusion I wish again to thank the participators in the discussion for their sympathetic treatment of my intellectual efforts. If I have omitted reference to the paper of Mr. Ratner, it is because in his case a sympathetic understanding is manifest which calls for no reply—indeed, his paper seems to me to answer by way of anticipation some of the criticisms upon which I have commented, especially the one concerning the nature of antecedent existences.

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#### BOOK REVIEWS

An Outline of Aesthetics: Edited with introductions by Philip N. Youtz: The World, the Arts and the Artist. Irwin Edman; The Judgment of Literature. Henry Wells; The Mirror of the Passing World. M. Cecil Allen; With Eyes of the Past. Henry Ladd; Scientific Methods in Æsthetics. Thomas Munro. New York: W. W. Norton & Company, Inc. 1928. xi + 88 pp.; ix + 95 pp.; xiv + 102 pp.; x + 100 pp.; xi + 101 pp.

While readers of this Journal may on various grounds welcome such a series as this, they will certainly question its value as an outline of esthetics. They will, however, find Mr. Edman's essay germane to philosophical interests and Mr. Munro's volume of some importance for a realization of the great complexity of the subject designated esthetics in college catalogues, provided that that subject is to be thought of in terms of any genuine subject-matter. Scientific Method in Æsthetics will offer them scores of pedagogical sug-

gestions and easily available devices for direct study, because Mr. Munro does not limit scientific method to laboratory technique. The other three volumes scarcely call for comment in a philosophical journal, though it may surely be supposed that Mr. Allen's book on painting will be as enlightening to philosophers as to other men; and what Mr. Ladd says of the sources of our critical prejudices about art may very well be applied to the historical explanation of our half-conscious prepossessions in more purely theoretical fields. Mr. Wells' contribution is slender, slenderer than even these thin little volumes might lead one to expect.

In spite of its suggestiveness, and the concrete plans offered for self-questioning or for the making of interesting questionnaires; in spite of the range of these inquiries, involving direct esthetic percention, various sorts of appreciation, various types of objective analysis of works of art, the critical examination of our terms, and the analysis and revision of standards of value as such, Mr. Munro's chapters make up a pretty loosely organized series of discussions in which there is a considerable amount of repetition. Definite theoretical results we must not of course expect, since one can not read the book without at least seeing that such results in the present state of our knowledge are not available. What does emerge is a clear sense of Mr. Munro's own direct and patient interest in such details as philosophers are much too ready to disregard in favor of broader and often quite meaningless discussion, the pleasant generalities that we are all so familiar with, or the current talk of standards, verbally made out with some degree of clarity but with little relevance to esthetic experience or to the nature of art.

Mr. Edman's essay is a very short and very clear, though perhaps almost precious, exposition of the naturalistic view of art and To the popular audience addressed this view will also, one may hope, seem simply the natural view. Philosophers and critics of other schools will object; but so lucid and sensitive a statement will be persuasive even where it is a priori least acceptable. the sort of statement that argues very little and depends on constant suggestion of concrete images to carry itself convincingly for-Its weakness, if it has any, lies not in a failure to deal with opposing points of view, but in the somewhat too soft glow that it imparts to a beauty that is genuine enough, and fully enough exemplified in Mr. Edman's own writing, but which remains a little unconvincing, and would even seem undesirable, as the tone or character of any social life in any country of this world. If naturalists are a hardened lot of sinners, their cause is signally strengthened in Mr. Edman. The world he envisages is enriched by a tenderness only too rare in our time, while the basis on which he builds is as

solid as the atoms of Lucretius, as eternal as the essences of Santayana.

D. W. Prall.

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#### NOTES AND NEWS

We regret to announce the death, on May 1, of Professor Charles A. Bennett, of Yale University, at the age of 44, after a lingering illness of more than a year.

Professor Bennett was born in Dublin, June 15, 1885. After a course at Trent College, Derbyshire, England, he went to Oxford and received the A.B. degree from Queen's College in 1908. He came to the United States in 1909 and received the Ph.D. degree at Yale University in 1913. He was appointed an instructor at Yale in 1911, became an assistant professor of philosophy in 1915, associate professor in 1924, and a full professor in 1926. He had been chairman of the Department of Philosophy since 1920. He is the author of A Philosophical Study of Mysticism, published in 1923, and At a Venture, published in 1924, and was a frequent contributor to the Yale Review, Harper's Magazine, The Independent, and The Journal of Religion.

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The Theory of Relativity: For What Is It a Disguise? JAMES MACKAYE.

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A Personal Impression of Contemporary German Philosophy. SIDNEY HOOK.

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Meanings and their Exemplifications. Charles A. Baylis. The Applicability of Logic to Existence. John Dewey. Book Reviews. Journals and New Books. Notes and News.

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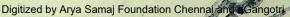
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## THE JOURNAL OF PHILOSOPHY

FORMS OF GENERALIZATION, AND THEIR CAUSES

SCIENTIFIC progress has been seriously obstructed through the assumption that all strictly scientific principles must be of the form that is found in the physical sciences. Physico-chemical laws are of the form: all X is Y; or, if X, then Y; and they therefore enable us to predict necessary consequences. For example, from changes in the tension, diameter, or length of a string there result definite and assured changes in the rate of vibration or pitch; we deduce with precision the resultant of a parallelogram of forces; and under defined conditions we anticipate with certainty the product of a chemical reaction.

Scientific principles of the form, No non-X is Y, or, if non-X, then non-Y, enable us to predict the impossibility of certain consequents, and also to assert the necessity of certain antecedents. example, without an understanding of addition no one can come to an understanding of multiplication, and without certain definable personal experiences no one can come to an understanding of romantic literature, or write convincingly about the London slums. Such principles are available or discoverable in great number, and are essential, for example, in drawing up a curriculum or in writing a biography. Most, if not all, "laws of learning" should really be stated in this form, which gives the sine qua non's of a given performance. For we do know that habits are not acquired, insights sights and understanding are not achieved, and sound ways of thinking not established without many prior conditions which it is important. important to bring about. But we do not know that when those prior conditions are brought about the results will surely follow.

This inability of ours to state the laws of human life and learning in terms of necessary consequents is usually obscured by stating the law in terms of tendency: e.g., "acts which occur at the same tells us that while concurrent acts in some cases form such a unity, in most cases they do not. We have no warrant whatever for acting a universal tendency; and the general practice of stating a universal tendency; and the general practice of stating "H. B. English, Dictionary of Psychological Terms, under caption of

cover, to the common false assumption that all scientific principles must be stated in the form, All X is Y; or, if X, then Y; that is to say, in the form of necessary consequence.<sup>2</sup>

Lately there has been some recognition of the failure to demon. strate laws of necessary consequence in the field of human learning; but this recognition has been followed by the hasty conclusion that all psychological laws are statistical, or deal with probabilities only. In fact universal laws are attained in the field of psychology, concerning necessary antecedents or sine qua non's of learning, as well as statistical laws concerning probable consequences. Precisely the opposite condition prevails in the physico-chemical sciences. There we find universal laws as to necessary consequents, but as to antecedents, only statistical laws of probability. For example, we can not tell, universally, whether a change of pitch is due to change of diameter, of length, or of tension of a string; but the latter are more probable antecedents than the first named. When this two fold difference is recognized it becomes apparent that the difference between scientific generalization in the fields of physics and in the fields of psychology is a difference not of degree, as is commonly maintained-but of kind. It is, therefore, a difference that depends not upon the stage of development the science has reached, but upon the subject-matter with which the science deals.

The student of logic and of scientific method is interested in discovering exactly in which fields one type of generalization or the other is attainable, and what the underlying cause of this difference is. To these questions let us now turn.

In certain fields of biology it seems that universal laws are attainable, both of antecedence and of consequence. For example, this acorn, if it grows under definable conditions, will produce a leaf of a certain form; and, conversely, if we find on the ground a leaf of that form, we know that somewhere an acorn of that sort has so grown. In a field very remote from this, in sub-atomic physics, we not only predict the type of radiation that is caused by specific changes from simpler to more complex forms of atomic structure, but also, when such "cosmic rays" of a specific length are detected, we infer that somewhere just such changes in atomic structure have occurred.

What is the common character of these two classes of phenomena in so many ways diverse, that permits us to formulate universal laws both of antecedence and of consequence? It is that in each case, continually throughout the sequence of changes under consideration, a highly specific and definite structure is not only isolable, but actually isolated from other organizing tendencies in the

<sup>2</sup> I have demonstrated this point much more fully in an article to appeal shortly, probably in July, in the *Psychological Review* entitled "Coöperation of Conflict in the Psychology of Learning."

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universe, in the sense that what material enters into this structure is ordered in subservience to it. This isolation, definiteness, and continuity may be summed up in the proposition that throughout the sequence under consideration these phenomena form part of one and the same class of events. The leaf and the acorn are two phenomena in the life-history of a specific variety of, let us say, white oak. Whereas the change of pitch, and of vibration rate, and of tension, diameter, or length, each is a distinct class of events; they form a sequence only when the string is struck, and an ear hears; and these are still other classes of events.

No doubt some more precise characterization and more adequate proof of this hypothesis is desirable. First, let us consider the two operations of numerical computation and of classification. These enter into most scientific generalizations, and are significant for our problem because in them we find in extreme form the antithesis between laws of necessary antecedence and laws of necessary consequence.

In numerical operations, viewed temporally, the consequents are completely determined, the antecedents not at all; for in these operations we have universal laws in the form, if X, then Y; but none in the form, if non-X, then non-Y. For example,  $.005 \div 300$ , gives .00005, and that only; but there are innumerable ways of getting .00005. We may, to be sure, state the general ratio which prevails between pairs of all possible antecedents of .00005; but that amounts to no more than saying, if non-Y, then non-Y. We have merely classified Y.

The operation of classifying, also, we must view temporally if we are to see clearly the antithesis between universal laws of antecedence and of consequence. In classifying proper we "generify," if I may coin a word to contrast with "specify," the other operation possible in classification used in the broader sense. When we have "generified," let us say, coral islands in the South Pacific, according as they exhibit evidence of emergence or submergence, we have thereby knowledge of all the necessary antecedent operations in this process of "generifying," but none of any possible consequent operation. Extraneous information is needed to suggest that prehensive movements of the phenomena that illustrate com-

prehensive movements of the earth's crust.

Again, we can not from the operation of "specifying" animals as sentient or non-sentient, know that sentient beings include the rational and the non-rational; but we do in that operation assert the things, to use the ancient terms. The one exception only proves the rule; for we may predict the necessary consequents of specify-

ing plane figures as rectilinear only because here numbers enter into further specifying operations.

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We have yet to take account of a third form of scientific knowledge, which, like our knowledge in biology and in certain fields of physics, gives us universal laws both of antecedence and consequence. In operations of geometry, we can often, but not always, infer the shape of a figure from the properties of some parts, as well as vice versa. For example, an arc gives us the circle, and certain parts of a triangle the whole of it; just as we may deduce those parts from the figure as a whole. In this respect geometrical operations differ from numerical operations and also from classification, and are comparable to those isolated, definite continuous sequences we have noted in empirical science, where universal principles both of consequence and of antecedence are ascertained.

Before attempting to summarize our conclusions we should note not only the differences observable in universal principles arrived at in the several fields of science, but also the differences in statistical generalizations. It is often said that in the physico-chemical sciences, as well as in psychology, we can state the consequences in statistical form only. However, statistical statements in physics and chemistry concern only quantitative variations about a given mean; while, in psychology, statistical laws concern qualitative differences, and the presence or absence of the phenomenon in question. For example, students are more likely to stay in college, who have certain kind of preparation, or are of a certain age, or attain a certain measure of "intelligence." To stay in college and to be dropped from college are results qualitatively distinct, it will be admitted. And so learning anything is qualitatively distinct from not learning that thing; and it is with such consequences that psychological statistics deal.

The recently emphasized "uncertainty factor" in physics does not appear to introduce any new element into this discussion; for the two indeterminate factors, position and velocity, are theoretical antecedents to the phenomena observed. The uncertainty here is comparable to our uncertainty as to whether a change of vibration rate is due to change of diameter, tension, or length of string, or any combination of these.

One further element of obscurity may be removed, I think. It is commonly assumed that the next moment is in all its elements a necessary result of what is now taking place, and that therefore our inability to state the necessary consequences of an event is due to present ignorance. But necessity here has no meaning apart from universality. Hence it is meaningless to say, for example, that what I do next minute depends wholly upon what is happening now since no other person can be like me—in important relevant re-

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spects—without being born when and where I was born, going through the life I have lived, and looking out on the world from this typewriter desk. He can not significantly be like me without this typewriter desk. He can not significantly be like me without being me. So generality here is impossible, and assertions of necessity meaningless. Similarly the notion that the universe as a whole of necessity pursues the path it does pursue is meaningless.

Relieved from this assumption of the all-embracing necessary sequence of things, we may on the basis of the several differences empirically observed between types of scientific inquiry, attempt to state more comprehensively and convincingly the cause of these differences.

The argument points to the conclusion that such differences all arise from a radical discontinuity in events. Universality of statement, both of consequence and of antecedence, is practicable wherever we can isolate, define, and continuously observe a certain class or type of structure. Our ability to do this depends upon whether the object is in fact isolated, and continuous in some highly complex and definite way. Objects of this sort are found in the sub-atomic structure of things, in organisms, in geometrical data, and perhaps in other fields of inquiry.

Where the structure we do observe is brought together at the beginning of the period of observation, we arrive at universal conclusions concerning the consequences, and at merely probable or statistical statements concerning qualitatively distinct antecedents. The statistical aspect of our universal conclusions has to do merely with quantitative variations from a stated mean. This structure may be brought together by nature, as in motions of the stars, and in the processes of death; or by man, as in the working of machines and in the operations of number. The power to predict in all cases seems to depend upon the mathematical structure observable in the phenomena in question.

Where the structure we observe is brought together at the close of the period of observation, we arrive at universal laws concerning qualitatively different antecedent. For example, any act of attending or learning reaches at its close a combination or unification or "insight" which can not be defined in terms of the elements of that result. Hence we can not deduce that result from those elements; we can not affirm a universal consequent. But we can affirm the necessary antecedents, the sine qua non's of that result, of that act of learning.

This analysis of the whole problem will not be complete unless I can show that the ability to arrive at laws of necessary antemuch, but not of necessary consequence, in acts of learning, bears chemical sciences, the ability to reach laws of necessary consequence

but not of necessary antecedence, obviously bears to mathematical operations. To this end, I introduce an example taken from Kohler's well-known experiments with apes.

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Here there were in all some sixteen steps of learning, but within these may be noted more than one series of steps. Expt. No. 2 begins such a series, when the ape perceives that an object desired may be drawn toward himself, by a string attached. No. 3 continues this series, for now there is no string attached; and the ape must recognize a stick lying there as a suitable instrument. In No. 6 this use of the stick must be made possible by first removing an intervening box. In No. 11, the problem concerns the stick itself, for it is too short unless one stick be fitted into another. Without some such series of "insights" the final trick is not learned.

I believe it is evident that only as we *classify* the later steps of learning of this sort as particular cases or species of the earlier, do we know the antecedents necessary; but from such classification, as in all acts of classification, we can not deduce the necessary consequents.

This sort of learning we call information. Another form of learning consists in improving the processes of thought by setting up new "ideals" of method. This illustrates classification in that stricter sense which I have called generification, as opposed to specification. For example, from the methods pursued in his mathematical studies, Plato arrives at an ideal of abstract thinking and demonstration, which he would apply to all fields of knowledge. The antecedents necessary to such thinking he lays down very clearly in well-known passages in the seventh book of the Republic. But not even Plato could on the basis of his experience deduce the consequents, or even suggest the richness of scientific method which has flowered on the stem he planted.

Summarizing, I conclude: (1) in terms of the form of universal and statistical law attainable there are distinctions between the several sciences that are differences of kind, not of degree. (2) In some fields of science (arithmetic and the physico-chemical sciences) we have universal laws only of necessary consequents, and statistical laws of probable antecedents, together with statistical statements concerning quantitative variation in the consequents, about a given mean. (3) In other fields of science (classification, and studies of acts of learning) we have universal laws only of necessary antecedents) (sine qua non's) and statistical laws concerning qualitatively different consequents. (4) These differences result from the discontinuity of natural processes, and from the fact that in the former sciences the structure under observation is brought together at the beginning of the period under observation, and in the latter at the end. (5) That in certain cases (geometrical science and in

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ether latter nd in certain phases of biological and physical science) universal laws are possible, both of antecedence and of consequence, and (6) that this possible, but of the fact that in natural science certain highly is the result of the fact that is closed and definite structures are in fact isolated, and continuous throughout the period of observation; while in geometry these structures are isolable both in thought and for practical purposes of prediction, though not isolated in nature. (7) Where definite continuous organization is not achieved either at the beginning or at the close of the period of observation, we should, according to the argument, have statistical laws only, whether of antecedent or consequent; and our predictions should be problematic as regards quality and not merely quantity or degree. Such a field of science we seem to find in the social sciences.

The chief value of these conclusions should be found in removing certain prejudices that now obstruct the scientific study of learning and human behavior, which is mostly a matter of learning. In this field our inquiry should be primarily with the discovery of the necessary antecedents or sine qua non's of learning. human learning depends on organic maturation we should find, and in fact do find, laws of necessary consequents, as well as of antecedents; and so far as human learning depends upon physico-chemical conditions, as perhaps in habit formation, we may expect to find laws of necessary consequents. In general, however, we in this field of scientific study shall find, as to consequents, only statistical lawslaws of probability.

From this it follows that a proper understanding of human behavior, and the control of it, depends upon the construction and comparisons of life-histories, in which the sequence of acts of learning may be observed; for only through such studies can we arrive at and test laws of necessary antecedents and of sine qua non's. This conclusion does not suggest the utter futility of laboratory experimentation in psychology; but it explains the very small net result such experimentation has produced, in comparison with the biographic or "biotic" methods employed by Galton, Binet, Terman, and Stern in their much more significant studies.

PERCY HUGHES.

LEHIGH UNIVERSITY.

<sup>3</sup> Compare Percy Hughes, "The Center, Structure and Function of Psychology,,, this Journal, Vol. XXIV, pp. 85-95; pp. 113-120; pp. 148-153.

#### BOOK REVIEWS

The Idea of Value. John Lard. Cambridge: At the University Press. 1929. Pp. xx + 384.

This book, by the Regius Professor of Moral Philosophy in the University of Aberdeen, is one which every serious student of value theory will welcome whole-heartedly. For one thing it supplies a want in English philosophical literature which has long been felt, namely, a history of the idea of value in modern philosophy. Such studies have recently appeared in German, but there has been until now none in English. In the second place, the book contains certain genuine contributions of its own which should mark, I think, a distinct stage in our thought on some very perplexing questions. Finally it is an eloquent and convincing argument for the doctrine of absolute values as the kernel of value theory.

Needless to say, the book is delightful to read. The lively and picturesque style with which the readers of A Study in Realism are already familiar, prevents the technical analysis, which is often inevitable, from ever becoming really dull, and the rich background of experience and knowledge, revealed on every page, gives the reader a comfortable sense of the adequacy of the author in the handling of a philosophical problem so close to the humanistic aspects of reality. To say that it is delightful does not mean that it is easy to read—still less to review. Professor Laird's natural wit not infrequently tempts him to substitute a quip for an argument, and his habitual tendency to qualification and understatement often makes it difficult to determine just how much he may fairly be said to maintain.

First, a word about the historical phase of the work. Although made throughout subordinate to the development of the author's own theory, this part is, nevertheless, on the whole, extremely well done I should personally have been glad to read the book for this alone. But, interesting as the picture is, it can not be denied that, as history. it is somewhat out of perspective. Kant is given a place—and the importance of that place is fully recognized—but Hegel is ignored completely and modern idealistic theories of value inadequately With regard to more recent developments the perspective is no less unsatisfactory. At the beginning of modern value theory it would have been justifiable to emphasize Meinong and Ehrenfels to the extent that Professor Laird does, but the later stages of the movement are wholly ununderstandable without the Neo-Kantians. especially Windelband and Rickert, who are not even mentioned It can not be thought that the author is unfamiliar with their work. Their neglect can only mean that their importance has not been sufficiently recognized. The history of the idea of value, as Pro-

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fessor Laird writes it, is not so much an account of the way value theory has actually gone, as the way it has developed in his own mind. In pointing out these limitations it is only fair to say that history has obviously been used only as a scaffolding for the construction of the author's own theory. This historical part might be described as chips from a Scottish workshop—although, it must be admitted, they are rather large chips.

It is, then, with Professor Laird's own idea of value that we are chiefly concerned. With his ninth chapter, entitled "Towards a Conclusion," he begins the presentation of an idea or theory of value which, as I have said, constitutes a real contribution. His conclusion may be briefly stated as follows: He holds that the universe contains a certain pattern or scheme of values. These are in theory measurable, but remain unaffected by attempts to measure them or even to apprehend them. "This system is rational and objective, not arbitrary and relative to individual feeling or even corporate sentiment." This timological aspect of values, as he calls it, is the kernel of value theory. But there are two other ways in which the idea of value is used which must in some way or other be related to the basal notion. These are the theory of value as a function of relations in nature (values of natural election) and the theory of value as a function of psychological interest. All three theories have been defended in the past and all are held at the present time (p. 301). It is Professor Laird's main thesis that all three ideas must be somehow included in a general theory of value.

The general outline of the argument, we are told, is very simple and the stages are described on p. xx of the "Introduction." The first chapter deals with the subordinate (but important) conception of utility and at the same time, with economic good. The main discussion begins with the second chapter, where Spinoza's doctrine of value is considered, and ends with the suggested conclusions of the ninth chapter. The book concludes with a discussion of the standards and ards and measures of value. Spinoza's theory of value is in a way made central because he plainly suggested the three-fold division of the subject which the author thinks all subsequent investigation of the subject should follow. The three strands of this "thread of Thesens", Theseus' are, first, the relative values of natural election; second, the relative values of natural election; and the relative values of psychological interest (i.e., of pleasure and conscious apetency); and third, the absolute values of excellence or rational part rational perfection. The meaning and scope of each member in this triple division. triple division, together with the relations between them, seems to define the define th

him to define the entire problem with which we are concerned.

By following this thread of Theseus, or by mounting "the ladder of values," as he elsewhere expresses it, we come to the "kernel" theory—the objectivity of these absolute values. Before

seeking to follow this thread it is desirable perhaps to make some what clearer what is meant by these technical terms.

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By the values of natural election (the term is taken from a passage of Montaigne) is understood any case where we find election or rejection in nature. We find it, of course, in the biological world. The insect that fructifies the plant is a value to the plant or its species. But Professor Laird would extend it far below the biological world. He expresses it in the principle of the non-indifference of nature. "Whatever matters to a given thing or, in mildly metaphorical language, helps or hinders it, is a value to the thing" (p. 304). The term "value" is popularly applied to such relations and we have no right to limit it to cases where there is consciousness of the relation.

The second conception needs only to be stated. It is that notion of value which makes it dependent upon or relative to feeling and desire—in short, *interest*. This notion stands, for Professor Laird, half-way, so to speak, between the relative values of natural election and the absolute values of rational insight. It presupposes the former for its existence and requires the latter for its interpretation.

The third conception is called the *timological*, the term being borrowed from Meinong. It is best expressed by the notion of *dignity*, Kant being the chief modern source of the notion. Timology is our insight into values. The values of this level are absolute and the insight is rational (p. 318).

Professor Laird is chiefly concerned in maintaining his doctrine of objective, rational, and absolute values against all those theories which would make them a function of something else. His position may best be understood by seeing how he orients his own thought towards prevailing conceptions of value, more particularly towards those of some of his fellow-realists and certain theories associated with modern idealism.

He objects to the definition of value in terms of interest alone as, for instance, Perry's—for two main reasons. In the first place, he sees no good reason why value, in an entirely proper sense of the term, should not be extended below the level of consciousness or interest. Natural election admittedly provides the context for psychological "interest." May it not itself constitute the value, in which psychological interest may indeed participate (often indeed in a disturbing fashion) but which need not be mental at all? (p. 196). He concludes that it does. He is equally certain that it is impossible to get the standards of value which Perry recognizes out of a subjective principle of preference (p. 360). The appreciative view can not stand without somewhere presupposing objective timology.

This part of Professor Laird's argument is perfectly clear and

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his criticism of psychological and subjectivistic theories entirely convincing to the present writer. For him value is no subjective advendent to an external reality, but in some sense part of the very dendent to an external reality. On the other hand his position with regard to structure of reality. On the other hand his position with regard to "idealistic" theories is neither so clear nor so convincing. One source of difficulty lies in the fact that nowhere is this theory adequately stated, the only criticism appearing as a minor element in the chapter on "The Objectivity of Values."

The idealistic theory is identified with the coherence principle of value and is treated as one form of the perfection theory. Bradley is taken, unfortunately, as "the most eloquent and in many ways the best expression in English," Bosanquet not being even mentioned in this connection. The objections to this theory, as one gleans them from detached passages, seem to turn on two points. Perfection, on this theory, is identified with completeness, and completion of an unworthy thing is itself unworthy or worthless. Value must therefore lie in something else than completeness. Even more fundamental is the failure of this theory, according to Professor Laird's view, to account for the objectivity of value. He apparently interprets comprehensiveness and coherence in a wholly social way. He points out, rightly, that sociality does not make value; it is at most one criterion of value. We find coherence and consistency in evil just as we do in error, and the same argument may be turned against the coherence theory of value as against that theory of truth (p. 244 ff.).

I am not interested in defending this particular form of the idealistic theory. I have myself elsewhere repeatedly expressed the view that value can not be equated with coherence. Coherence is but one value among others. My only point is that those that hold this view have a right to complain of the inadequate treatment it has received. I should be disposed also to hold that an idealistic theory of value, as such, involves neither the identification of value with logical coherence per particular than the identification of value with

logical coherence nor a merely social conception of value.

The entire drive of Professor I is it

The entire drive of Professor Laird's argument is in the direction of insisting upon over-individual and over-social values. "Logically speaking," he tells us, "the objectivity of excellence is the kernel of value theory where the greater values are concerned." One of the best, as also one of the most important, chapters in the book is that on the "Objectivity of Values." Professor Laird reapproval" for the "undeniable and obstinate appearance of objectivity in so many human valuations." With this view I have so ciated with those who are satisfied with such substitutes. My Valuerare characterized as a large-scale attempt to get, by genetic

argument, objectivity out of subjectivity in this fashion. In a sense this characterization is just—the book was an attempt to use the genetic method as far as it would go—although even then important reservations in the closing chapter are ignored in such a criticism. On the other hand, a long line of studies since that time (1909) has served definitely to place my views in what Professor Laird would call the timological category. A persistent tendency to identify my present views with those of this earlier book will, I hope, be considered sufficient excuse for injecting this personal reference at this point. It is to be hoped that my article in the forth coming volume of Contemporary American Philosophers will serve to clear up the situation.

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Two parts of the work the present reviewer welcomes with especial pleasure, namely, the treatment of axioms of value, and the development of the principle of the commensurability of all values. I have long maintained both of these positions, and believe that it is of the utmost importance that it should be recognized that there are some things that may be said about value as such, quite irrespective of our empirical knowledge of valuable things-statements about value that are true, "no matter what." This is, I think, implied in the principle of the rationality of our insight into values and their relations, which Professor Laird maintains with such eloquence and logical power. There are, to be sure, certain points at which one might differ with the details of the development of his theme, but that he has made good his main contention seems scarcely disputable. The discussion of these points, to be of any use, would involve too much technicality. On the latter point-of the commensurability of all values—it may be sufficient to say that, according to his account, commensurable values need not be arithmetically commensurable. The other objections ordinarily brought against this conception also seem to me to be sufficiently met. he calls the "commingling of values" complicates, but does not destroy, comparison and the formulation of standards of values. The entire treatment of this section (Chapter X) emerges in the conclusion that, if all values are commensurable, and it is probable that they are, there exists a single system of all values. This single timological system is rational and objective (p. 372).

The entire problem of value as envisaged by Professor Laird is, we have seen, defined (a) by the determination of the meaning and scope of each member in the triple division and (b) by the determination of the relations between them. One might, indeed, very well raise the question whether this really defines the entire problem. For many philosophers the task of a theory of value extends far beyond these limits. It involves, for instance, questions of the relation of value to truth and of value to existence and be-

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ing—such questions, in fact, as led the present reviewer to give to a recent work in philosophy the sub-title of *Metaphysics and Value*. Professor Laird has, however, the right to define the objectives of his book as he pleases, and any critical evaluation of it must move within the limits of those objectives.

The first part of his task Professor Laird has executed with brilliancy and with moderate satisfaction to the present writer. It can scarcely be doubted that the meaning and scope of each of these concepts has been adequately determined and that no one of them can be reduced to the other. The ambiguity in our use of the idea of value seems to correspond to real distinctions which we wipe out at our peril. This is, I think, the chief contribution of the book to value theory. I can not see how any general theory of value can, in the future, proceed satisfactorily without taking into consideration Professor Laird's conclusions on this point. That the relations between these three ideas have been satisfactorily determined is, however, open to grave doubt.

One thing has been clearly shown, I think, namely, that the appreciative values can not stand without presupposing those of natural election, or without passing on to the timological (p. 315). In other words, they all form a "ladder of values." But we are left in doubt as to the relation of the lower rung to the second, and above all of the values of natural election to the timological values. We should have welcomed some attempt at a clearer statement of the relation of these values, a better understanding of the ladder. all probability it is Professor Laird's view that they can not be related in any other sense than that described. There is good reason for this supposition. It is possible, he tells us at the very end of the book, that a greater degree of continuity may be established between these various values. But he thinks it more probable that the whole attempt to bring precision into the idea of value ends with a less extensive but more acute ambiguity. Does this represent a finally agnostic view on this question? It probably does.

This is but one of many questions we should like to ask Professor Laird. Are these absolute values existent or are they merely valid? In other words, what is the relation of validity and value to being? Were these values, of goodness, beauty, etc., in the world when it was populated by amoebas, or were there only values of election then? Questions such as these have given the reviewer great difficulty, and he suspects that Professor Laird is not wholly into relation with the natural values of election without some conception of development, with its corresponding notions of potentiality book, viewed as a history of the idea of value. It is at this point

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that these limitations are reflected in Professor Laird's own views. His mind seems to move wholly in the circle of ideas of rationalism vs. empiricism. The dynamic point of view, and the thinkers who represent it, are wholly absent from his thought. The omission of Aristotle is, of course, justified, for the sketch begins with Hobbes, but the omission of the representatives of this view in modern thought, including Hegel, is not justified. An objective view of value must in the end be a cosmological view. It must hold that every created thing has its own good; there must then be the three types of good or value that Professor Laird has distinguished. But these goods must also be related in a cosmological conception. This conception must, in the end, follow the ways of thinking marked out by Aristotle, St. Thomas, Leibnitz, and Hegel. It is a pity that this strand in value thinking is not sufficiently worked out.

Questions of this sort do not lie within the scope of the book. And yet we feel that somehow they ought to. At many points we have the tantalizing experience that we are just about to receive some satisfaction for our metaphysical hunger, only to have the promise turn into a mirage. Notwithstanding, there is a great deal in the book to be thankful for. It is one more evidence of a steady drift towards a philosophy of values which is transcending the barriers of the schools. This drift-towards a conception that includes, not only over-individual but also over-social values—is one through which idealists and realists can come to a large degree of mutual understanding. As opposed to merely naturalistic and pragmatic theories of value, it stands for that which is the essence of idealism in the larger human sense. It is rather a pity that we have to place Professor Laird among the realists. Yet here, also, we are not sure that we quite understand Professor Laird. The timological theory, he seems to admit, requires, not only an absolute point of view, but also in some sense an absolute mind. In his own words, the timological point of view "has to do, in old-fashioned words, with what is excellent from God's point of view" (p. 321). not sure just what this is meant to imply. It is all very well to say that the absolute values are there, but we find it difficult to say just how they are there without some such conception as God's mind. It seems difficult to transcend the relativity of the elective and appreciative values without some doctrine of transcendent mind which is not far removed from absolute idealism.

The mild disappointment we have felt impelled to express at the paulity of Professor Laird's conclusions on certain points does not mean that we are not very grateful for what we have received. Indeed all such criticism is already disarmed by the modesty of the author in his description of his problem in the "Introduction." On the general question of the scope and function of value theory,

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Professor Laird is modest in his expectations. It is possible, we are told, that the current philosophy of value is new, but he doubts it. Walue may prove to be the key that will eventually release all the human sciences from their present position of pathetic, if dignified futility," but it has not as yet proved itself to be such. For his cautious weighing of the subject as a whole we are also grateful. No review of a book such as this, for which Professor Laird has made us his debtor, can hope to be adequate. If what I have said may tempt the reader to examine it for himself, I shall be satisfied. The book has its values for the reasons specifically stated. It has a further value for its studies of economic and esthetic values to which no specific reference has here been made. But a still deeper value lies in its rich suggestiveness. It can not be doubted for a moment that the reader unacquainted with the field of value will have had opened up to him a field of reflection of which he has not been aware. The reader already acquainted with the field will find his mind travelling in all sorts of directions not hitherto explored. He will possibly become wearied, and even bewildered at times, but he will have had a very stimulating experience. Perhaps that is one of the best things that may be said of any book.

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The Intelligible World: Metaphysics and Value. Wilburn Mar-SHALL URBAN. London: George Allen and Unwin, Ltd. New York: The Macmillan Co. 1929. Pp. 479.

Mr. Urban, whose earlier work on Valuation attracted and deservedly retained the attention of the English-speaking philosophical world, attempts in the present volume to discuss what he regards as the central theme of "perennial" metaphysics, viz., the unity, truth, and goodness of "reality." As the sub-title suggests, Mr. Urban holds that the secret of reality lies in value, and he would like to persuade us that this secret has never, properly speaking, been kept since Plato's time.

It should not be necessary to point out (especially to an American audience) that Mr. Urban is an authority upon value, having made an unusually prolonged special study of that subject, and that he should receive, and doubtless will receive, a very general and respectful, receive, and doubtless will receive, a very general and respectful hearing. We are all grateful to him, and I wish to take these thin

these things for granted in what I am about to observe. This, accordingly, being understood, I have to say (as I apprehend) that the tone of the present book indicates a deplorable frame of mind. of mind. I have never seen the argumentum ad verecundiam employed with ployed with comparable naïveté or with such pontifical satisfaction. I have no wish, indeed, to complain of the most thorough-going preference for "perennial" and "magnanimous" to "minute" and "modernist" philosophy, but the preference should be justified by argument, and the line of division should similarly be justified.

In this book all such argumentative justification seems introduced as a sort of afterthought intended apparently to reassure the faithful "There are 'tired radicals' in philosowho are already convinced. phy as well as in politics," Mr. Urban says on p. 172 in a character. istic sentence which repeats what he has said many scores of times. "and this weariness is but another word for futility." One might suggest that it is not the radicals who are tired, or in the alternative. that even a tired radical may be better than a smug conservative. Again, is it really true, that there is a single "perennial" or "magnanimous" philosophy and a single small-minded modernist metaphysic? On the latter part of this question Mr. Urban himself seems to have some qualms. He suggests, rather dubiously, that Nietzsche is the prophet of modernism, and the littleness and transience of man and his works, judged from a "scientific" standpoint, the prophet's message. But Mr. Urban should have taken much more pains to show that there is just one magnanimous philosophy corresponding to the "natural metaphysic of the human mind" (was there ever a shoddier phrase?) and that all the works of modernism are opposed to this great-minded "natural" metaphysic.

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Let me choose an example. On p. 171 Mr. Urban refers to the Ontological Argument as "that masterpiece of magnanimous thought upon which the criticism of the minute philosophers has for centuries broken itself in vain" (an interesting indication of the vanity of magnanimity is given two pages later when it is declared that "the ontological argument of Plato and Anselm . . . has been refuted again and again''), and it seems plain that Mr. Urban regards the Ontological Argument as a particularly firm and admirable proof of the "ultimate" identity of "value" and "reality." Accordingly, since Kant was one of the severest critics of the Ontological Argument, we should like to know whether Kant was a minute philosopher or otherwise and whether Kant's criticisms of the Ontological Argument were effective, although the criticisms of the minute philosophers were futile. To this question I do not know the answer. On p. 183 Kant is praised to the skies because he is there said to be the first who clearly presented the notion that "intrinsic values constitute the key to an intelligible world." On p. 345, on the other hand, we are told that "the position in which Kant left the whole problem of value was one from which thought is only with difficulty emerging." I can make nothing of such statements taken in conjunction, but I can suggest with some confidence to Mr. Urban that the attitude of Leibniz and of Descartes (and Leib

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ments ice to Leibniz is a favorite hero of Mr. Urban's) was very much more "magnanimous" towards "science" than the petty "magnanimity" that Mr. Urban affects, and that Leibniz's attitude towards "mathematical" logic was much too minute for Mr. Urban's liking.

Since it is quite impracticable to deal here with the entire range of Mr. Urban's argument (which endeavors to lay bare the very marrow of "magnanimous" philosophy) I must content myself with sticking to what I regard as the book's principal theme. This, I suppose, is "the ancient postulate of perennial philosophy—the inseparability of value and reality" (p. 20). This "postulate" is said in various places to be an "axiom" (inverted commas being used, e.g., on p. 134). In the preface it is said to be "almost" an axiom although the force of the "almost" is apparently rescinded in the next clause which informs us that "to attempt to divorce them can issue only in unintelligibility."

Even a "postulate" which is "almost" an axiom should, I conceive, be clear; and I have to suggest that the terms "reality" and "value" are, both of them, thoroughly imprecise in Mr. Urban's pages. (I am not suggesting that any other writer on "value" has succeeded better than Mr. Urban in this important matter, and I wish gratefully to acknowledge his many services in setting, and in reminding us of, problems, whether or not he solves them. I am merely suggesting that he has not succeeded.)

Take, first, "reality." Mr. Urban correctly maintains that we can often predicate "reality" where we can not directly predicate "existence." Thus the "validity" of propositional implication may be "real," although it is not directly and ostensibly a character of existing things. He further maintains, however, that things may "exist" without being "real," and suggests (e.g., on p. 152) that the "real" is "the deepest and highest in existence." Hence metaphysics, would it not seem? becomes very easy indeed. Space and time and matter exist, but aren't real. Evil exists and may be intolerable, but since it isn't deep or high (at any rate not the deepest and the highest) it may be only existentially not really intolerable. 'Reality" must be monistically conceived, but pluralism or even logical atomism might quite well be true of "existence." Is not

this sort of talk very cheap as well as very easy?

Obviously, any wholesale concessions of this order would be much too magnanimous for Mr. Urban. To avoid them, he says, in the main, two things, viz., (1) that existence is better than non-existence because reality is better than appearance and (2) that any sense." I submit that the first of these arguments is irrelevant and the second meaningless. Regarding the first of them, it is (a) not self-evident that "reality" is better than "appearance" (for

an impossible dream might well be finer than much that is solidly actual) while (b) if the meaning is that what appears to exist but doesn't exist is not so good as what appears to exist and does exist. there is plainly an irrelevance concerning existence. Regarding the second, I have to say that nothing can possibly exist "in an abstract sense" and in that (alleged) sense only. A thing either exists or doesn't, and if it exists it is concrete. We may, no doubt, think of it abstractly (e.g., if we refer to it by means of general predicates). But what is concrete does not exist "in an abstract way" for the mere reason that we think of the concrete in an abstract way. (Incidentally, Mr. Urban does not always object to abstraction. He only objects to the abstraction employed by his opponents. in some curious arguments that endeavor to convince us that a state of affairs which is conceiveable but which would be intolerable must therefore be "unreal" and "unintelligible," he seems to be disturbed by a pretty remote sort of intolerability, to wit, the point that disturbed the philosophers in Laputa concerning the weakening of the sun's rays some millions of years hence).

Take, next, "value." Mr. Urban is fond of speaking of "weasel words" meaning, apparently, that a word is a weasel if it sucks the meat from what it designates. (Thus Mr. Urban accuses Mr. Alexander of moral obliquity in speaking of deity in a weaselly way because Mr. Alexander suggested that deity might grow.) Adapting this elegant diction, then, one might suggest that "value" for Mr. Urban is a "cormorant" word—that is to say, not a dainty feeder. Nearly everything goes into this cormorant's crop, purpose, meaning, validity, beauty, righteousness, and much besides. The word, in short, means so much that it tends to mean very little indeed. Omnia sig-

nificare ac nihil significare ad idem recidunt.

Let me illustrate by reference to "meaning." Obviously, if "value" includes all "meaning," what is valueless must also be meaningless, and Mr. Urban is able to put all his opponents to the sword by the simple device of saying that any philosophy he considers wert-frei, in any single respect or with regard to any single expression, is in that respect gibberish. Thus he peoples a good many asylums, no doubt "in an abstract sense." Some further analyses of "meaning," however, might seem not intolerable. According to Mr. Urban, "meaning" implies mind and purpose, and no doubt if I point to something and say "I mean this," I have a purpose, viz., to indicate to someone else what I am referring to. ficult to see, however, how the thing pointed to thereby becomes a purpose or how it becomes mental unless it happens to be mental or purposive before I pointed to it. Similarly, the "meaning" of conventional significance of some noise (e.g., the noise "boulder") may indicate what is not a purpose or part of a mind. And "cop"

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text" which is all that some people mean by "meaning" (I suspect Mr. Urban of complicity) might surely be a non-mental or even a scientific context. Mr. Urban should really be a little more careful about filling in his certificates of lunacy. When he argues further that what has "meaning" has value, therefore can not be futile, therefore can not be abhorrent or "intolerable," one can only gasp.

Let us turn, however, to the value-predicate itself according to

Mr. Urban's exposition of it.

In his Valuation (e.g., on p. 78 of that work) Mr. Urban argued that "worth or value" was "the funded affective-volitional meaning of the object for the subject" and that it represented "the desirability of the object, although not necessarily the fact of actual desire"; and he endeavored (with what degree of logic I shall not here enquire) to extend this doctrine to impersonal or over-individual and even to over-social values. By his followers in England (see, e.g., Dr. Tennant's Philosophical Theology, Vol. 1, Chap. VII, especially p. 149 n.) this doctrine is usually, and as it seems to me is correctly, taken to be antithetical in principle to such an analysis as Mr. G. E. Moore's according to which good is a simple and indefinable concept. I am afraid, therefore, that Dr. Tennant and others among Mr. Urban's admirers will be a little hurt at finding their leader affirming in the present volume that it is "a commonplace of present-day thought" (which Mr. Urban wholeheartedly accepts) that value is "a logically primitive concept" which is "ultimately indefinable" (p. 139 and elsewhere) and that anyone who denies the same is easily convicted of reasoning in a circle. (I think, indeed, that Mr. Urban is a little too hard upon his friends in this matter, and also, by implication, upon his former self. can always ask, no doubt, whether what is desired, or fulfills a purpose, etc., is really good, but if the author of Valuation were to suggest to the author of The Intelligible World, that the form of this question was a petitio, and that "good" means a certain enduring and authentic satisfaction or purpose-fulfillment, although not the shams of this order, it seems to me that the author of Valuation might successfully acquit himself of the charge of circularity, although though he and the author of The Intelligible World could not both be right and would flatly contradict one another.)

The present Mr. Urban, however, appears to think that he has overcome this apparent discrepancy between an affective-volitional and a "noetic" (p. 145) doctrine of "value" by the simple perception that "value," although an indefinable concept, is not a quality. Thus he says (p. 146), "When, for instance, Sidgwick asks what alone it is that is good or intrinsically valuable, and finds

it wholly and alone in a pleasurable state of consciousness, he assumes that good is something we can find, point to, like a sensation or a sense quale. It is, of course, nothing of the sort. It is not an entity to be pointed to. It is a meaning to be acknowledged.'' In other words, in this new way of thinking, the theory of value is simply and solely a theory of salutation—a theory in terms of acknowledgment, not knowledge.

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Mr. Urban has a bad habit of not giving references, and he gives no references by which one might check the accuracy of this exposure of poor Sidgwick's crude ideas. I am therefore going to suppose that Sidgwick's statement means precisely what it appears to mean, viz., that the assertion "pleasure is good" is true and that the assertion "something other than pleasure is good" is false. If so, so far as I can see, nothing at all is said about the type of predicate that "good" is. It might, for all that is said, be a predicate like "legitimate" in the assertion "This inference is legitimate." Let us, however, accept the fact that it is crystal clear to Mr. Urban that "worth" is not a quale-so clear, indeed, that he does not trouble to explain what he means by a quale. And let us also grant that he can "point" to "value" (for pointing is just what an indefinable concept does). What, then, does Mr. Urban "point to" in this theory of acknowledgment that is not knowledge, this "noetic" concept that has nothing to do with knowing, except in the minds of babblers like Sidgwick? I am bound to confess that I do not find Mr. Urban very helpful here.

Developing his theory of "acknowledgment," he tells us that what is valuable is "worth" existing or that it "ought" to be. Since he does not, so far as I can see, ever suggest that "worth" and "value" are at all different in meaning, it is a little difficult to see why a conscience so sensitive to the charge of circularity as his should ever have been disposed to accept the first of these suggestions. Let us turn, therefore, to the second suggestion. How can Mr. Urban seriously maintain that "ought to exist" is a simple and unanalysable concept? Is not some analysis possible into the relevant terms and relations? And what is this "logically simple" and "noetic" concept of acknowledgment? For my part, if I knew that a thing was good I should be glad to acknowledge it, and if I had, and could have, no knowledge on this point, I should do my best to refrain from acknowledgment. I should hold similarly, that the worth of anything (i.e., its value as opposed to disvalue) would justify its production or conservation, that is to say, would justify a practical imperative or an "ought." But without a great deal of careful explanation which is not attempted in the present volume, I can not see how Mr. Urban's various suggestions are anything except a

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puzzle. I hope Mr. Urban's other readers will be as much interested puzzie. I have been, because (to speak with the decried Sidgwick) it is good to be so much interested. And the interest of many, I am sure, will not take the form mine has taken, that is to say, will not take the form of a strong and opposite reaction. But I do think that much in the central part of this book's argument is not intelligible except in the sense that one can understand the historical process by which Mr. Urban arrived at his conclusions. this "intelligibility" is not "valuable."

JOHN LAIRD.

UNIVERSITY OF ABERDEEN.

Themes of Plato. Frederick J. E. Wood-The Son of Apollo. BRIDGE. Boston: Houghton Mifflin Co. 1929. ix + 272 pp.

Plato is the most elusive of great philosophers. He never expresses an opinion of his own. He writes, so far as we know him, entirely in dramatic dialogues, and no dialogue ever comes to a definite dogmatic conclusion. Yet most critics write with more or less confidence about his opinions and even describe his "system." The truth is that the critics are themselves philosophers, and a philosopher normally studies Plato, as he studies life, for the sake of the small nuggets of philosophic truth which he can find thereby. Plato gives us a scene by the banks of the Ilissus, describes the characters talking there, the ways in which they reacted on one another, the confusion and the intensity of their thoughts and aims in life; and the philosophic critic, ignoring all that as irrelevant, labors to find exactly what Plato's own conclusion really is, and must often be angry with the man for not stating it plainly.

He will be angry with Professor Woodbridge also, for this sceptical, original, and imaginative book; arbitrary but conscious of its own arbitrariness; anxious for historical truth, but realizing vividly that history is a changing thing. Professor Woodbridge starts by showing, after Grote, how very few real facts we know about the life of Plate of Plato, and how much of our supposed knowledge is myth and idealization. idealization of the "son of Apollo." It is only Plato's books that are solid fact. Yet, in the great corpus of Platonic writing which has come down to us from antiquity, he reminds us how large a part has at an arrangement of the state of the has at one time or another been suspected of spuriousness. Then, somewhat somewhat arbitrarily, he chooses a small number of dialogues—all of them games them genuine and all believed to be early in date—from which to draw a picture of Plato's real aim and achievement.

I largely agree with Professor Woodbridge's view about Plato's lier write earlier writings. Plato lived in an extraordinarily interesting society, a society which thought and cared passionately about great

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things, and in it he knew a wonderful character and talker, Socrates, an indescribable man, who reminds one at different times of Dr. John. son and Tolstoy and Shelley and Anatole France. The young Plato must have listened fascinated to the talk between Socrates and the leading people of the time, statesmen and generals and philosophers. He must have repeated the conversations and described the scenes. Then, apparently, he took to writing them down: the scene, the characters, the conversation, the clash of thought. As Professor Wood. bridge well says, though he finds no consistent philosophy in the dialogues, they contain "hints of every philosophy ever written." Plato shows us how Socrates and his friends or victims talked about Politics—about the real heart of politics, the question how a city is to be righteous; about Education, and the question how in the world you are to teach men to be good, especially when no one vet knows exactly what goodness is, and how on the other hand you certainly can, and must, teach them mathematics; about Love. low and high, dangerous and ennobling, and the necessity of having the element of love, that is, of burning passion, in your pursuit of truth or of goodness as well as in your friendships; about Death, and the way a man dies or should die, without fear or lamentations, doing his duty to the end, and thinking hard, though without any conclusion, about the possibility of life after death.

Professor Woodbridge shows us in dialogue after dialogue that we have "dramatic scenes," not to be regarded as definite contributions to theory, though indirectly they contribute much. give us, as he says, "a dramatization of the life of reason," and perhaps he would admit that they show, whatever question is discussed,

a certain unity of spirit or of philosophic preference.

The main criticism which I should venture to make on Professor Woodbridge's conception is that perhaps it tells us only half the truth, or the truth about only the beginning of Plato's work. quite early dialogues (if the dates are reliable) are practically Mimes, humorous dramatic reports of conversations. But Plato was specially interested in conversations about philosophic subjects, and after a time, I should say, became more interested in the substance or conclusion than in the form or the incidents. Thus the first book of the Republic is a brilliantly interesting and amusing mime, the account of a conversation in which Socrates made a pretentious and cynical sophist look a fool. But at the end, it seems, of that conversation Plato felt that there was something more at stake than the confounding of Thrasymachus. Is righteousness really and truly all that Socrates has said; is it the most valuable and important thing in the world, or was Thrasymachus, though overthrown in argument really right at bottom? So in books II to X, the argument goes on; crates, John-Plato nd the phers scenes e char. Woodin the itten." about a city in the ne yet d you re, low ng the truth

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at first keeping a semblance of drama, but gradually almost losing it. The other books of the Republic were probably written a good deal later than the first: they show just that tendency to turn from drama to undiluted philosophy which is at its strongest in what are usually considered the last writings of Plato's life. If I had to choose a turning point I should suggest, perhaps, the Gorgias. Written just after the judicial murder of Socrates it does indeed keep up the full dramatic form to which Plato was accustomed, but it preaches the Socratic doctrines of righteousness with a burning passion of indignation which gives a very poor chance to the characters upholding the other side. I think Professor Woodbridge, besides writing a charming book, has done good service to Platonic study in emphasizing one side of the master's work; but he has still another book to write about the Plato who somehow ceased to be his Plato, and drew nearer to the Plato of Shorey or Taylor.

There are some rather painful misprints here and there which should be corrected in a second edition: "assininity," p. 167, Nisias for Nicias, p. 137, Dionysius for Dionysus, p. 176.

GILBERT MURRAY.

Oxford, England.

Philosophy by Way of the Sciences—An Introductory Textbook.

RAY H. DOTTERER. New York: The Macmillan Company. 1929.

Pp. xv + 469.

The orientation course seems to have passed the experimental stage successfully and to have achieved rather general recognition in school curricula at the level of the junior college. Thought of as a summary for those who do not go on with their formal studies and as an introduction to advanced work for those who do, the survey course has been widely approved.

With orientation as the motif various orchestrations may be provided. The natural sciences may be surveyed separately and the social sciences may be so treated; or either may be taught without the other. Another scheme of organization stresses scientific method, and the historical changes in technique may be displayed as the essence of scientific and cultural advancement. Courses in have been converted into orientation. On any plan the profusion of has been the question of the duestion of the converted into orientation.

has been the question of what to leave out.

Professor Dotterer has employed the survey method as a substiphy. An introductory chapter is followed by six others devoted to materials and problems of science, after which Part II discusses

"Science, Reality and Values." In this latter part are the materials introductory to philosophy. As regards matters of philosophic debate, the tendency of the argument is to resort to the opinions of recent thinkers and thereby to present a brief survey of possible views. An easy eclecticism in viewpoint results which would make it possible for teachers widely differing in philosophical positions to employ the book. One of the chief virtues of the work is that the author is not trying, at all costs, to indoctrinate the reader with a philosophical viewpoint. Where he has definite opinions to present they are suggested to the mind of the student after discussion, rather than being featured as the only possible position.

The chief defect of the book is the omission of systematic discussion of the social sciences. Part I concludes with psychology, and only an occasional section in Part II involves social matters Although social science courses in many colleges may be running parallel to the course which this book would fit, the omission seems unwise in the light of the purpose of the book. The student should be introduced to the criticism of social patterns of behavior and come to recognize both science and philosophy as themselves traditions within the background of other activities. Indeed, without a rather vivid emphasis upon the social function of knowledge much of their meaning may be lost. Both science and philosophical criticism may seem to be a kind of glorified cross-word puzzling, preferable, if at all, merely as a matter of taste. But, irrespective of the way in which one may define either science or philosophy, there is such a thing as social knowledge, and philosophy has had an interest in it since the days of Socrates.

The difficulties facing the writer of a textbook for the survey course are so many and so varied, however, that Professor Dotterer deserves to be congratulated upon a capital piece of work. Certainly anyone with a textbook course in the introduction to philosophy would do well to consider the alternative presented in *Philosophy by Way of the Sciences*.

SYRACUSE UNIVERSITY.

PAUL W. WARD.

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## JOURNALS AND NEW BOOKS

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John Dewey. The Man and His Philosophy. Addresses Delivered in New York in Celebration of His Seventieth Birthday. Cambridge: Harvard University Press. 1930. vii + 180 pp. \$1.50. ("Foreword": H. W. Holmes. "The Inauguration of the Plan to Celebrate John Dewey's Seventieth Birthday Anniversary": H. R. Linville. "Introduction": W. H. Kilpatrick. "John Dewey's Contribution to Educational Theory": E. C. Moore. "John Dewey's Influence in the Schools": J. H. Newlon. "John Dewey's Influence on Education in Foreign Lands": I. L. Kandel. "The Prospect for Empirical Philosophy": H. W. Schneider. "The Philosophies of Royce, James and Dewey in their American Setting": G. H. Mead. "The Toastmaster's Words": J. R. Angell. "John Dewey and Social Welfare": Jane Addams. "John Dewey and Liberal Thought": J. H. Robinson. "In Response": John Dewey.)

#### NOTES AND NEWS

Professor Rignano was born May 31, 1870, at Livorno. He was a student in the Faculty of Mathematical Physics of the University of Pisa and the Polytechnical School of Torino, and received a dephilosophical studies and scientific synthesis, including biology, psychology, and sociology. He was officially appointed professor of philosophy (privatdozent) in the University of Pavia, although he never practiced teaching. In 1906 he founded the international review of scientific synthesis, Scientia, and was director of it until his death.

<sup>&</sup>lt;sup>1</sup> We have taken excerpts from a communication sent us by Scientia on the Life and Works of Eugenio Rignano, who died February 9, 1930, in Milan.

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His published works are as follows: Di un socialismo in accordo con la dottrina economica liberale, Torino, 1901 (French edition, con la dotti.
Paris, 1904); La sociologia nel corso di filosofia positiva di Augusto Paris, 1907, 1904 (French edition, Paris, 1902); On the Transmission of Acquired Characteristics. Hypothesis of Centro-epigenesis, Open Court, Chicago, 1911 (French edition, Paris, 1906) (Italian edition, Bologna, 1907) (German edition, Leipzig, 1907); Proofs of Scientific Synthesis, London, 1918 (French edition, Paris, 1912) (Spanish edition, Madrid, 1923); Psychology of Reasoning, London, 1923 (French edition, Paris, 1920) (Italian edition, Bologna, 1920) (Spanish edition, Madrid, 1923); Biological Memory, Bologna, 1922 (French edition, Paris, 1923); La vita nel suo aspetto finalistico, Bologna, 1922 (German edition, Berlin, 1927); Che cosa e la vita? Nuovi saggi di sintesi biologica, Bologna, 1926 (French edition, Paris, 1927); Man Not a Machine. A Study of the Finalistic Aspects of Life, London, 1926 (a translation of the first part of the preceding work); Problemi della psiche, Bologna, 1928 (French edition, Paris, 1928); The End of Man, Fundamental Outlines of a System of Morals, Founded on Harmony of Life, Open Court, Chicago, 1929 (Italian edition, Bologna, 1923); he wrote a number of articles in Italian and foreign periodicals on the subjects developed in his books, and also during the war articles of propaganda and articles relative to the phenomena of the war; he also wrote articles as propaganda for popular culture, for a reform of elementary and popular education, and for a closer intellectual understanding among nations, particularly between Latin countries.

Rignano took an active part in the long debate between the Neo-Lamarkists and the Neo-Darwinists regarding the transmission of acquired characteristics, which led him to formulate his famous centro-epigenetic hypothesis, capable of accounting for the transmission and also of reconciling the contradictory arguments of the preformists and the epigenesists, which, although apparently opposed to each other, seemed to him should be retained as equally valid. He believed his hypothesis to demonstrate the mnemonic nature of the mechanism which he imagined for the transmission of acquired traits traits, and, in turn, the equally mnemonic nature of all ontogenetic developments, the equally mnemonic nature of all ontogenetic development. He undertook to arbitrate among the "mnemonists" such as Hering and Semon, and the partisans of the "mechanism of development in the speking to development." Rignano resolved that opposition by seeking to explain the ontogenetic development of one part as well as of the other, the other, the mnemonic phenomenon, properly speaking, as two particular control of the mnemonic phenomenon, properly speaking, as two particular control of the specific ticular cases of a nature quite general in life, which is the specific accumulation, and which he postulated as a basis for his centro-epigenetic hypothesis.

It was easy for him to make the transition to the mnemonic explanation of all the finalism of life, finalism of which the ontogenetic development is only one particular manifestation.

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With this thesis Rignano sought to reconcile the age-old conflict between the positivistic biologists and the mystically-inclined biologists gists who admit a single aim for the entire universe, by admitting finalist tendencies, not for the entire universe, but only in its biological parts; and in recognizing in the mnemonic accumulations themselves the genuine actual causes, or vires a tergo, of all the various finalist tendencies, biological as well as psychic, exhibited by any organism whatsoever in its entirety, as well as for any fragment of life whatsoever in any particular. And thus he approached a reconciliation also in the clash between mechanists and vitalists, without further forms of procedure. By postulating a new form of energy as the basis of life, obeying always and everywhere the fundamental laws of energy, but endowed with particular qualities which characterize it exclusively and which are determinate and precise, Rignano was ready to pass from biology to psychology, reconciling the contrasting theories of English associationism and German Gestaltism, maintaining that affective activity permeates all the manifestations of thought and is the only and unique creator of thought itself. But affective tendencies and the whole of psychic life culminate in the great human aspirations of justice and morality, and thus the transition is made from psychology to sociology.

In the debate between socialistic criticism, which in the name of a higher justice condemns the present capitalistic régime, and orthodox economics, which reveals the dangerous utopianism of collectivism and of other socialist systems, Rignano intervened to defend a system in which the gradual socialization of private capital, achieved by means of a modification of inheritance laws, which would stimulate saving more than present legislation does, is accompanied by the widest liberty granted to private initiative.

In the realm of morals, in the face of the conflict between pagan and Christian ethics, his temperament, which was both positivistic and idealistic, made him defend a moral system based on the harmony of life. Rignano describes this goal of man as the highest crown of the whole system of the finalism of life.

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# THE JOURNAL OF PHILOSOPHY

## ARE RELATIONS EFFABLE?

THE purpose of this little essay is to ask, not to answer, a fundamental question. The problem of relations is regarded as crucial by most philosophers. Who does not talk about them? Who does not make assertions about their nature and importance? We affirm or deny their existence. We characterize them as real or ideal. We say that they are internal or external. We describe some as "saltatory" and others as "ambulatory." We contrast or we identify them with qualities. In all propositions about relations, intended to be valid, we assume that we can talk about them. Is the assumption unchallengeable? Can we discourse about relations at all?

In what follows I wish to challenge the view that relations as experienced are either identical or congruent with the relations about which we make philosophic assertions. I wish to suggest in all seriousness the possibility of actual relations being logically ineffable. I wish to show the discrepancy between the relations known in specific contexts and the relations described independently of

Two preliminary remarks, however, are necessary. In the first place, the possibility of experienced or actual relations being logically ineffable or indescribable is prima facie no reason for disparaging discourse as such. The question of the identity or symmetry between "thought" and "being"—the postulate of all rationalism—is more is more general. Whether our inability to describe real relations (should this be the case) applies to all objects of experience depends upon more ultimate considerations. If logical discourse can be shown to clash with every content of experience in the same way as it appears. it appears to clash with relations, then, indeed, the argument that experienced experienced relations are indescribable may be used to impugn the fundamental fundamental assumption of rationalism as regards the harmony—pre-establish assumption of rationalism as regards to the harmony pre-established or post-established—between the contents of experience and the contents of ex rience and the forms of discourse. But if relations are contents of experience that uniquely resist logical description, then the case of rationalism with respect to other contents of experience remains unassailed by the argument that relations are ineffable. It all depends upon what pends upon whether relations are typical or exceptional contents of

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the experienced real—a bone of contention among different theories of knowledge and different theories of reality. The problem whether relations are logically ineffable—and this is my second preliminary remark—should thus be understood in a neutral sense, as a problem capable of different solutions. I wish to state it without prejudice. Whether the relations we experience are the same as the relation we abstractly talk about is a special and genuine question to which one theory may essay one sort of answer, and another another.

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I find all discourse about relations to involve two paradoxes, and both seem inimical to relations as specifically experienced and concretely embodied. In order to distinguish them by appropriate labels, I venture to speak of them as the "Paradox of Insulation" and the "Paradox of Substantivization."

The "Paradox of Insulation" can be stated very simply. consists in isolating elements from the complexes in which alon they can be found or located, and then treating them as if ther meaning in isolation were the same as that which they enjoy in the contexts they inhabit. When entities can be shown to have no mean ing apart from the contexts in which they are imbedded it seems at surd to conceive of them as contextless. Relations appear to me to be precisely elements or entities which are inseparable from the complexes or contexts in which they figure as conjunctions. I have nevel encountered relations not relating, and I find it impossible to think of them in the absence of a total situation of which they are integral ingredients. I can not envisage relations save as transactions or cor nections either between ideas or between things. In short, the office of relations is to relate, and in the performance of that office is to b found their only intelligible definition. Relations not relating at simply words which—to me, at any rate—signify nothing at all.

What do relations relate? It is customary to speak of relatast terms. What are terms? Here again we must insulate. To define terms we must have recourse to other abstract elements taken from concrete complexes outside of which they are never experienced namely, subjects and predicates. Terms, considered formally, make the defined either as qualitied subjects or as the qualities constituting such subjects. We need subjects (already qualitied or endowed with predicates) and qualities qualifying them, before we can speak terms or relata, and we need relations (such as inherence or presence) to discern one term or relatum from another. Speaking the distinguished but not actually dissociated. Substantives, though the distinct of the distinguished by characteristics somehow belonging to them. And characteristics, again formally distinguishable, must be conceived as attached the distinguishable of the distinguishable, must be conceived as attached the distinguishable of the distinguishable, must be conceived as attached the distinguishable of the distinguishable, must be conceived as attached the distinguishable, must be conceived as attached the distinguishable of the d

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to that which they qualify. And what are relations not conjoining in specific fashion either specific substantives or specific adjectives? It is impossible to mention any of these three elements of discourse lit is impossible to the other two. We are obviously dealing here without reference to the other two. We are obviously dealing here with distinctions involving a process of thought essentially circular. With distinctions involving a process of thought essentially circular. With distinctions can only be made by reasoning which perhaps all logical distinctions can only be made by reasoning which is circular, and perhaps circular reasoning, as Hegel believed, is not a defect of thought but rather its cardinal virtue. I am here concerned neither with the one point nor with the other. I am only interested in this, that the circular process involved in the verbal distinction between substantives, adjectives, and relations is a token of their actual togetherness, since any one of these three aspects of thought can only be defined in conjunction with the other two aspects.

Now when we speak of relations, asserting of them a nature which is real or ideal, having an esse in re or only in intellectu, being intrinsic to their terms or extrinsic to them, are we not dealing with them as if they could be detached from the relata with which they are ineluctably compresent? Without the assumption that what is verbally distinguishable is actually separable—a common and fatal assumption—there would be no problem of relations in the form in which it is usually stated by epistemologists and metaphysicians; with that assumption the problem turns into a paradox. For as soon as we insulate relations from their terms they cease to be what they are necessarily experienced as being-transitive acts or states, dynamic transactions or expressions, functional connections or conjunctions, presupposing terms between which to move or to operate. How can one speak of equality apart from objects being equal, or of causality divorced from things or events causally determined? When we do speak of equality and causality, as I am actually doing at present, we are no longer dealing with specific transactions between specific terms, but with logical forms or abstract stract concepts. Our attention is focussed (as I shall show later), not upon relating relations, but upon related terms. Equality and causality, regarded as conceptual concretions, have nothing to equate or to connect. This is the fate of all relations when insulated from lated from their relata. Relations as such—the words "as such" epitomize the paradox—do not relate. And if relations as such do not relate. not relate, whatever we say of them in discourse, though intelligible and valid and valid, would appear to have little relevancy to their modes of actual functioning. Yet it is of relations as such we are obliged to speak when the they are not: speak when we pretend to tell what they are or what they are not: whether they are essences or existences, whether they are qualities or categories whether they are essences or existences, whether they categories, whether they are epistemic or constitutive, whether they are primordial are primordial or derivative. To conceive of relations in general is to conceive of them in vacuo; to think of them apart from any con text is to falsify their experienced status which is to be always part of a context; to make assertions about their nature per se is render absolute what can be understood only as relative. "Paradox of Insulation," in short, is the paradox of disembedding that the sole meaning of which consists in being embedded. theories about decontextualized relations—and as such only can the be independent themes of discourse—rest on the anomaly of forget ting or neglecting that relations cease to be relations when they cease to relate.

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The inveterate anomaly of insulating relations from their terms leads inevitably to the second anomaly which I call the "Parador of Substantivization." This, too, can be simply stated. It is paradox inherent in the very nature of discourse which can tun anything and everything into a substantival theme. As a matter of fact, discourse is neither wholly substantive nor entirely transitive It is at once concretion and flux: without fixed terms, there would be nothing to think or talk about, and without relations, no transaction between them could ever take place. It is foolish, I think, it ask whether terms and relations have any logical advantage over each other. We can eliminate from the notion of discourse neithe focal themes nor the mobile interactions between them. All though or speech rests in terms and moves through relations. Or rather terminal is anything which in discourse we dwell upon, and rela tional anything by which thought travels from one theme to another While terms and relations are indeed equally primordial aspects of discourse, as primordial as are the "perchings" and the "flights which William James ascribed to the stream of consciousness, the are merely formal aspects; there is no content which is preclude from playing either a substantive or a transitive part. If the offer of relations is to relate, and the office of terms consists in being it lated, anything actually relating is a relation, and anything stand ing in relation is a term. What, for instance, is equality? Shall we dub it a relation or a term? The answer depends upon whether we think by means of it or whether we think about it. In the forme case, its use is vehicular, in the latter, it is thematic. What holds of equality, being a relation if it is a mediating link, and a term if it a mediated subject, holds of every element of discourse. All religions tions surrender their vehicular nature in becoming thematic. are transitive only when they actually relate, when they make por To avoid confusion it should be noted that I am using the expression "transitive" in James's sense as descriptive of a part of discourse which is "substantive". I am not make the course which is "substantive". "substantive." I am not using it as employed by logicians to designate logical "property" belonging to some relations and not to others. So call non-transitive relations are here to be understood as transitive in the sense

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sible the passage from one term to another; as soon, however, as they are the chosen objects of analysis and description, instead of performing the office of transitional intermediaries, relations become converted into substantive entities, substantive entities being such as permit the ascription to them of specific properties. The anomaly inherent in discourse is briefly this: while we must distinguish entities in relation from the relations between them, we annul the distinction by forcing relations to behave like entities; but once they are cozened thus to behave the original distinction breaks out again, for without it we can neither define nor describe the likeness or unlikeness between types of relational entities. Relational entities the juxtaposition of these two words indicates the paradox we are here considering-belong to that realm of amphibians which are logically monstrous: in being relational they cease to be entities, and in being entities they can not be relational. The transitional and the terminal are notions which refuse to be combined in a single object of thought.

The anomalous character of relational entities may be brought out more sharply in connection with McTaggart's notion of substance. If we adopt his view of substance as applying formally to that which "has qualities and is related, without being a quality or a relation," 2 any relational entity, qua entity, qua something we think or talk about, distinguishable from any other relational entity by the possession of specific properties and relations, becomes a "substance" in compliance with the definition. In other words, a relational entity as "substance" is qualified and related, being itself neither a quality nor a relation. But it matters little whether we appropriate for a relational entity the name of "substance," "continuant," or "substantive"; what does matter is that we have to think of it as an individual and fixed subject of judgment, and in doing so we rob it of its transitive birthright in virtue of which alone it can function as a relation. We can thus talk of relations only by substantivizing them—i.e., by transforming them into qualitied and tied and related terms. To differentiate, for example, in the manner of James and Strong, between the relations of "difference" and "distance," by calling the first "saltatory" and the second "ambulatory," is to assert not what these do as vehicles, but what they are as themes. It is one thing to jump immediately or to ambulate in succession from one term to another, it is quite another thing to insulate these two relations from the terms they are supposed to relate relate, and treat each as a subject of a descriptive judgment. "Saltatory" and "ambulatory" are different predicates judged to belong to different subjects; as subjects thus distinguished by their

<sup>&</sup>lt;sup>2</sup> The Nature of Existence, Cambridge, 1921, p. 73.

<sup>3</sup> W. James, The Meaning of Truth, New York, 1909, p. 138.

appropriate attributes they neither jump nor ambulate. They do not operate at all, they are stark entities operated upon. And this is what we do with all relations when we transform them into logical subjects: we deprive them of the operational nature which they possess only in a context of terms, replacing it by a nature alien to them, a nature which is substantive rather than transitive, and in thus changing their nature we only succeed in telling what they are, but never what they do, and since the "being" of relations is nothing apart from their "doing," we never really succeed in asserting what relations intrinsically are.

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The two paradoxes involved in talking about relations über. haupt (either by assigning to all relations a universal status or by making a universal judgment about any specific relation)—and this is what philosophers are engaged in doing—would seem to bring us to this startling result: of relation we do not mean what we say, and we do not say what we mean. We mean by relations transitive operations or vehicular functions in given contexts or complexes supposedly knowable or real; but in speaking about them, we turn relations into subjects of logical judgments, in which alone they acquire the status of detached and immobile entities, and by which only they are asserted to have predicates pertaining to them as independent and universal substantives. Not thus are relations actually encountered: in the experienced or real contexts in which they appear they never manifest themselves as the isolated and substantivized subjects to which judgment reduces them.

This conclusion seems to run counter to the view on relations expressed by Mr. W. E. Johnson. According to this writer, "we must recognize that certain adjectives may be significantly predicated of adjectives . . . , and even of relations; and that certain relations may be significantly predicated as subsisting between 8 substantive and an adjective, or between one adjective and an other, . . . or even between one relation and another." The adjectives and relations "of which other adjectives or relations may be predicated must when so connected be called terms, in contrast with the adjectives or relations predicated of them." The logical mode in which adjectives and relations "enter as terms into a construct, is reflected in language by the substantival form assumed by them." But the fact that a relation may function as a "quasi-substantive" of which certain adjectives and relations may be predicated presents to Mr. Johnson no serious difficulty. Distinguishing between "primary" and "secondary" relations, and showing that the two sets belong to two different logical "sub-categories," must recognize, he thinks, that it is not the "primary" relation

\* Logic, Part I, Chap. XIII, § 6, pp. 214-216. For this reference 1 so indebted to my colleague, Professor D. W. Prall.

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The discrepancy between relational transactions, experienced in their actual contexts, and relational entities, those epicene substantives which we never experience, but which we always talk about, may be stated more clearly by reviving a distinction, made in a previous essay, between pre-analytic and post-analytic data. By a pre-analytic datum I understand any complex, experienced as such, forming the starting point of reflective inquiry, and given for analysis; by post-analytic data I mean whatever we find or take through analysis to be the elementary constituents of that complex, never experienced in isolation, being whatever inquiry terminates in when it can proceed no farther. The distinction, in short, is between the discrimination the discriminable and the discriminated, between that which induces the process. the process of discernment and what the process actually achieves. The analyzable complex and the analyzed constituents are obviously not on the not on the same plane of "givenness": nothing can be said to be given through the same plane of "givenness": through analysis unless something be antecedently given for analysis. Given its analysis comsis. Given, in the proper sense of the term, is the pre-analytic complex, literally plex, literally present before the activity of analysis can be set in motion: the motion; the post-analytic constituents are as such not originally 5" Pre-Analytical and Post-Analytical Data," this Journal, Vol. XXIV (1927), pp. 5-14.

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present, but only presented in consequence of the consummatory work of analysis. The ambiguity of the word "given" lends itself to these two uses. The constituents of a complex, presented by the labor of analysis, are veritable gifts thereof, which we can accept on reject, depending upon our faith in the efficacy of that labor; the complex itself is no free gift, its givenness simply means being extant, standing out in time or in space, in nature or in mind, as an object to be encountered, as a situation to be faced, as a problem to be solved, bidding analysis to do its best or its worst. Applied to relations, the distinction between the present and the presented is strikingly apposite. The only relations that are given are those that are present or extant within pre-analytic complexes, and given with them as their inextricably transitive ingredients. Whatever we encounter-on the level of experience, at any rate-is always complex, i.e., some thing or event with qualities in relation. I can think of no exception. If (for example) we hear a cough we hear a preanalytic complex: we hear something qualitied and related. The cough as a specific "continuant," specific because certain "occurrent" phases are connected with it by inherence or by some other conjunction, is extant as an unanalyzed but analyzable whole; its constituent elements-substantival, adjectival, relational-which we recognize only after reflection has disengaged them, are post-analytic distinctions subsequently presented, but initially never present as such. If this be so, an important consequence follows. If preanalytic complexes alone are "given," in the primary sense of that equivocal expression, then discourse about their disengaged or postanalytic constituents—be they terms or be they relations—is discourse about logically presented abstractions, but never about actually present or experienced situations. Actually present or experienced are always terms and relations. The little word "and" is the symbol of their co-membership in the same situation. It is one thing to refer to relations as the actual or experienced transactions that are present in and present with their pre-analytical complexes; it is quite another thing to describe them when logically presented apart from their contexts. Discourse about relations in ab straction from their terms—is this not one of the favorite sports of most philosophers?

Have we not here a genuine paralogism? The form in which Kant uses this fallacy as criticism of Rational Psychology may be extended to cover the present case. A paralogism, quoting Pro-

6 I have shown in another essay ("The Paradox of Judgment," this Journal, Vol. XXV (1928), pp. 197-205) the difficulty involved in the necessity of distinguishing between the act of "reference" and the act of "description" and the impossibility of judgment not to fuse the two acts. The case of relations is an instance of this general difficulty.

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fessor Norman Kemp Smith, "is a syllogism which errs in logical the sophisma figurae dictionis. In the major premise the middle the supposed as referring to real existence, in the minor only as extern is used as referring to real existence, in the minor only as expressive of the unity of consciousness." The "thinking I," which Kant regards as the middle term of those premises by which Rational Psychology seeks to establish the conclusions with respect to the self's substantiality, simplicity, personality, and ideality, has one meaning in the major and quite another in the minor premise. In the one case, the "thinking I" is present in the context of experience, in the other it is presented as outside that context; or rather, it is erroneously assumed that what is true of the self as a necessary constituent of a pre-analytic situation, is true also when the self is viewed as a post-analytic subject in isolation from that situation. All reasoning about mere relations is tainted with the same fallacy. If we press it into the syllogistic mould, such reasoning will be found to contain a middle term egregiously ambiguous. In the major premise, relations are used as insulated and substantivized, in the minor, as transitive connections in given contexts. In one premise, relations are post-analytic abstractions wrought by reflection, in the other, they are nothing apart from the pre-analytic complexes of which they constitute inseverable elements. And here, too, the unwarranted assumption is made that what holds of relations in given and specific contexts—and only as present in experienced and actual situations are they relational at all—must hold of them also when transferred to the sphere of pure discourse where they are necessarily hypostatized into absolute entities themselves qualitied and related.

The paralogism here noted may be exemplified by a typical illustration. Let us invoke once more the case of equality. Consider the case of equality. sider the following propositions: "the part is equal to the whole," "if equals be taken from equals the remainders are equal," "all men are created equal," "are not my ways equal?"—and try to ascertain how far any universal judgment about equality can be said to apply to its particular modes of functioning as referring to these instances. It is obvious—at any rate, to me—that the same word door word does not express the same relation between these heterogeneous terms. The terms. Infinite collections, finite quantities, human beings, God's actions—these are incomparable complexes or objects, and incomparable and incomparable are incomparable complexes or objects. parable are the forms of equality present within or between them as a relational description of the parable are the forms of equality present within or between them as a relational process or condition. Whatever we mean by God's ways being ways being equal, it is not their one-to-one correspondence we think of; and what of; and whatever it means to say that all men are equal, we do not

<sup>7</sup> 4 Commentary to Kant's Critique of Pure Reason, 1923, p. 470.

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envisage them as identical in size or weight. It is obvious, too, that when we think of equality, we think of it as qualified—equality ordinal or equality quantitative, equality qualitative or equality functional—the qualification in question being determined by the context in which and with which the relation is given. It is likewise obvious that what we say of equality in one scheme will not neces sarily hold of equality in another scheme; for example, we can make assertions about equality in the realm of numbers and quantities which will not be true in the domain of political and social organization. And if this is so, is it not obvious also that any universal judg. ment about mere equality, as a relation pure and simple, will commit the paralogism mentioned? The equivocation will take either of two forms. (1) What is true of equality as limited in application to one chosen sphere will be generalized and held applicable to every sphere in which equality appears as a connecting link. (2) What is true of equality as not limited in application at all, assuming that we can make any sense of equality not qualified as ordinal or quantitative or qualitative or functional, will be supposed to hold of equality under any limitation. In either case, equality will play the rôle of an ambiguous middle. We shall erroneously identify al variations of it with but one specific form given in and with a specific context; or, taking equality to be a theme of unlimited generality, as a pure and absolute entity, we shall surreptitiously substitute for it any of its protean forms.

Kant's criticism of Rational Psychology is thus eminently applicable to the case of all bare relations. We seem to be involved in similar predicament whenever we pretend to talk about relations an und für sich. The nerve of the predicament lies in the confusion between relations as integral ingredients of pre-analytic situations and relations as post-analytic entities treated apart from their contexts. As anchored to their contexts relations are describable only by the terms to which they refer. (Equality, for instance, must borrow its description from the terms having that relation: it is numerical if its terms are quantities, forensic if its terms are per sons.) Without reference to their contexts relations are either ineffable or they must be described in their own terms; in the latter case, they are indeed logical subjects, each distinguishable from the other by its appropriate predicate or predicates, but when taken thus absolute and unbound relations simply cease to be relations i.e. they cease to be the connecting links in a context of terms, which they are experienced as being. If any philosopher talks to me about mere or pure relations, telling me what they are in themselves or such—real or ideal, logical or psychological, categorial or empirical internal or external—I, for one, do not know what he is talking

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ves or a npirical talking about; when he mentions relations I am obliged to think of them as referring to the terms which they relate and which are related by them, but as soon as I think of them in connection with their terms, them, but as soon as I think of equality, is describable in incomany relation, like the relation of equality, is describable in incommensurable ways, depending upon the specific context to which it is confined. If relations are describable only by their terms, they can never be described uniformly or generally without reference to their heterogeneous terms, the entities described bear no resemblance to the relations meant or experienced. In either case, it is pertinent to ask whether relations qua relations are not ultimately ineffable.

I end, then, as I began, by asking whether the universal judgments about paradoxical relational entities, made by all logicians and certain philosophers, are valid judgments about relational operations, functioning as such in specific situations and indescribable apart from them. The query is not an idle one. For it raises by implication the question of validity of all those philosophic conclusions which have as their premises universal assertions about the nature and status of relations in general. Should relations be regarded as ineffable—and by their being ineffable I mean only that they are unutterable without a context of terms—a host of philosophic problems would disappear as meaningless. If no judgment with respect to any relation can claim universality, the specific context in which the relation operates defining its meaning and function, what becomes of those philosophic arguments which assume the possibility of making universal assertions about all relations? Let me mention but one illustration. Are relations universally internal or are they universally external? The strife of idealists and realists over this issue is indeed but a bootless wrangle; relations admit of universal judgments only when ab initio defined as having no reference to specific terms, but when so defined they have nothing to relate, and so cease to be relational. All philosophic controversies about the problem of relations as such, presupposing as they do the possibility of uttering the nature of relations in independence of the of the terms they are specifically relating, become on this view simply nonsensical. The view that relations are paradoxical entities when the simple only in tities when treated apart from their terms, being utterable only in connection with them, paves the way for a recognition that relations are tions are specific because the contexts in which they figure are specific and specific because the contexts in which they figure are specific. And the specific is precisely that in dealing with which universal in the specific is precisely that in dealing with which universal judgments are otiose. Such a view is not negative. is in essential sympathy with the positive tenets of pluralism and instrumental.

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Mind and the World-Order: Outline of a Theory of Knowledge, CLARENCE IRVING LEWIS. New York: Charles Scribner's Sons, 1929. Pp. xiv + 446.

It seems a safe prediction that Mind and the World-Order will be deemed the most important contribution to epistemology in years. It presents a new and complete theory of knowledge, carefully considered, well rounded, and persuasively presented. Its chief feature, perhaps, is a correction of Kant by means of C. S. Peirce, and the author thus christens his view "conceptual pragmatism." So to characterize it, however, is to overemphasize one of its aspects and to fail to do justice to its thorough and penetrating treatment of a multitude of epistemological problems, to its richness of content, and to the intellectual stimulation it affords.

Professor Lewis is both clear and cogent without being superficial. He plumbs complex problems without obscurity and without the aid of a private and complex technical terminology. His criticisms of views, current and classical, which run counter to his own, are brief, clear, and pointed. The book is long, but every sentence is pertinent and thought-provoking. One is inclined to ask for more rather than less.

It is only with considerable injustice that an outline of Professor Lewis's central theory can be given. He finds three elements in knowledge, concepts, qualia, and objects. The concepts are logical universals and are determined by the mind. Qualia are the ultimate elements in what is given to the mind and are unalterable by mental activity alone. Objects are the ordinary things of our experience, such as tables, and are determined partly by what is given and partly by the interpretation of this given by the mind.

His treatment of concepts and a priori knowledge was foreshadowed by his Howison lecture for 1926, The Pragmatic Element in Knowledge, and by his article in this Journal, "A Pragmatic Conception of the A Priori." By a concept he means neither a peculiar kind of psychological state, nor the historical meaning of any word or phrase, but "the logical intension or connotation of a term" (p. 67). "The nature of a concept as such is its internal (essential or definitive) relationships with other concepts. . . All terms or concepts . . . have their meaning eventually in the array of all meanings, and no member of this array is intrinsically primal or privileged" (p. 83). The categories are simply the more general and fundamental of these concepts. Concepts are independent of experience in the sense that we may interpret experience by any concepts we wish. We can change our concepts by a change in

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re genendent by any nge in mental attitude alone. Thus I can interpret this object before me as a cylinder, a pen, a poor buy, and so on, according to my momentary interest in it. But, on the other hand, since the concepts we use are determined by our interests, they are not entirely unrelated to experience. They "are ways of dealing with what is given to the mind, and if they had no practical consequences the mind would never use them" (p. 31).

What is given to the mind, however, can not be altered by mental activity alone; it has the characteristic of brute fact. The ultimate elements of this "given" are simple "qualia." These are to be distinguished from both concepts and from objects. Concepts always imply much more than can be given in any presentation, and similarly objects to which concepts apply are always more than can be given in any presentation. Qualia are recognizable but ineffable. They are given, but they are nameless. No concept can apply to them. We are acquainted with them, but we have no knowledge of them.

Objects, as opposed to qualia, are never given in their entirety, but may be known, not with certainty, but with probability. "For the objected presented to be real, there must be more to it than could be given in any single experience. The objectivity of the experience implies this 'more' " (p. 135). For example, when I say, "This object is round," I mean much more than that I am experiencing a round-looking quale. I mean that if certain things were done, I should experience an elliptical-looking quale, and that, if other events transpired, other individuals would experience other qualia, and so on. "Thus 'acquaintance with,' the recognition of what is presented as a real object of a certain kind, has already the significance of prediction and asserts the same general type of temporal connection as our knowledge of law, the 'knowledge about' which is stated in generalizations" (p. 133).

Knowledge of objects does not involve a relation of copying between what is given in an experience and some "independent object," but "it concerns the relation between this experience and other experiences which we seek to anticipate with this as a clue" (p. 165). To know an object "means that we are able to interpret validly certain given items of experience as sign of other posperience, the total content of such further possible extributed to the given in certain categorial ways, being atwhat we mean had the object, as constituting what we know of it and

what we mean by attributing reality to it" (p. 192).

Professor Lewis turns next to the problem of the a priori. What How do we know that experience will conform to the a priori prin-

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ciples decreed by the mind? The traditional answers are unsatis. factory and unnecessary. To be valid a priori knowledge need not be innate or self-evident or a logical presupposition of experience Nor need it be due to a limitation of experience by "a priori modes of our receptivity or intuition" (p. 198). On the contrary, "that is a priori which we can maintain in the face of all experience, no matter what" (p. 224). "The principles of categorial interpretation are a priori valid of all possible experience because such principles express the criteria of the veridical and the real. No experience could possibly invalidate them, because any experience not in conformity, which might be evidence against them, is automatically thrown out of court as not veridical in that category, and hence not pertinent to them" (p. 227). "The a priori is not a material truth delimiting or delineating the content of experience as such, but is definitive or analytic in its nature" (p. 231). It defines or explicates our concepts. Its paradigm is the definition, and it holds for all experience because definition is legislative.

"If the a priori is something made by mind, mind may also alter it'' (p. 233). Our fundamental concepts, categories, and definitions have been changing throughout the course of history. As knowledge develops, as interests change, we interpret what is given in different lights, by different criteria. Such changes are not arbitrary, but conform to changing purposes or attitudes. And, since the chief value of concepts consists in their ability to make possible communication and social coöperation, these interests will be the general human interests, rather than any merely individual ones. This responsiveness of our concepts to human bent or need constitutes the truth of pragmatism. However, "it is the a priori element in knowledge which is thus pragmatic, not the empirical" (p. 266). The brute-factness of the given does not alter at the behest of our interests, but our concepts do. Here as elsewhere, furthermore, lesser interests should give way to greater ones, and "certain important ends, such as intellectual consistency and economy, completeness of comprehension and simplicity of interpretation, occupy a place so much higher, for the long-run satisfaction of our needs in general, that they rightfully take precedence over any purpose which is merely personal or transitory" (p. 267), such as "the justification of belief from no deeper ground than personal desire. A pragmatism which has such "insufficient regard for intellectual integrity," which tends "to trench upon high-plane purposes from low-plane motives," is to be eschewed.

This pragmatic nature of our concepts does not contradict the eternal and certain truth of a priori knowledge. For "categories and concepts do not literally change; they are simply given up and

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replaced by new ones" (p. 268). "Categories and precise concepts are logical structures, Platonic ideas; the implications of them are eternal, and the empirical truth about anything given, expressed in terms of them, is likewise through all time unalterable" p. 269). The truth about concepts is absolute; the brutely given is also absolute. "It is between these two, in the choice of conceptual system for application, and in the assigning of sensuous denotation to the abstract concept, that there is a pragmatic element in truth and knowledge" (p. 272).

Empirical knowledge, as distinguished from a priori knowledge, is never more than probable. This has been commonly granted with regard to empirical generalizations, but, as has been shown, it is equally true of our knowledge of objects or events. For example, "when we make the judgment, 'This is round,' what we suppose ourselves to know requires two propositions to express it fully: (1) 'If this is round, then further experience of it will be thus and so (the empirical criteria of objective roundness)' and (2) 'This present given is such that further experience (probably) will be thus and so'' (pp. 284–285). "We could not possibly know anything like the second proposition except by a generalization from previous experience" (pp. 289–290). Such empirical generalization is forever at the mercy of future experience and hence probable only.

What, then, is the nature of probable judgment, and under what conditions is it valid? J. M. Keynes in his Treatise on Probability has already shown that probability judgments are relative to the evidential data on which they are based. Stated fully they would read, for example, "On the evidence X, A is B is probable." This remains true even though it turns out that "A is B" is false. Not ignorance, but only logical error can make a probability judgment false. "Probable judgment, if valid, is true" (p. 331). And once true it is always true, for further evidence can only give us a different probability judgment. "Just in so far as we are rational, what we believe is absolutely and eternally true" (p. 341).

"Probability . . . must rest upon some antecedent certainty" (p. 309), and Professor Lewis, in a carefully conducted argument shows that what we need to know in order to validate our probable 4. "It must be false that every identifiable entity in experience is equally associated with every other" (p. 368). This corresponds If this proposition is true it gives us that finite antecedent probability that Keynes has pointed out to be necessary. Given its truth, each verification of a generalization increases that generalization's

probability. That Principle A is true, is attested by the fact that what it demands is "that actuality be a limitation of the all-possible," and certainly, although "any possibility is a possible actuality, . . . the coincident actuality of all possibilities is impossible" (p. 368).

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If the entities of Principle A are associated in that order called "random," we shall determine orderly constituents of experience in terms of these random ones "by proceeding to simpler elements through analysis, by taking a larger whole into which the primary constituents may be organized, or by confining attention to abstracted elements, and disregarding the remainder of the given as irrelevant" (p. 384). For example, there are a large number of distinguishable color qualia, but we can group them under a small number of heads such as red, orange, yellow, green, blue, purple, black white, and gray. On this basis Professor Lewis was able to assert that there was a finite probability that his book would be bound in red. And this assertion remains true even though, as it turned out, the book was bound in blue. Even if there were an infinite number of color qualia we could still group them in some such way, and predict validly on the basis of this imposed order. By such means we can circumvent not only a random order, but even such a diabolical lack of order as Descartes' evil demon might present us with. mind will always be capable of discovering that order which is requisite to knowledge, because a mind such as ours, set down in any chaos that can be conjured up, would proceed to elicit significance by abstraction, analysis, and organization, to introduce order by conceptual classification and categorial delimitation of the real, and would, through learning from accumulated experience, anticipate the future in ways which increasingly satisfy its practical intent" (p. 391).

Such an account of the main theses of Professor Lewis's book gives but a skeletal picture of it. It leaves open many objections which he has foreseen and carefully answered. It leaves undeveloped many aspects of the picture which he brings out clearly. It leaves out entirely the very rich meat with which every interstice of the skeleton is clothed. Every page contains solid substance which yields rich nourishment in proportion as it is carefully consumed. No review can give an adequate account of such richness; one example of it will have to suffice. Instead of asserting that the real objects of our knowledge are independent of the knowing mind and letting it go at that, Professor Lewis points out precisely the three senses in which this is true (p. 193): (1) "The givenness of what is given." The content of experience is not created by the mind nor alterable by its activity. (2) "The truth of those "If-

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then' propositions in which the . . . possible experience, starting from the given, could be expressed." It is these propositions which describe the nature of the object known. The "if" clause depends on our active nature for its meaning, but the truth of the "then" clause, and also of the proposition as a whole "are things with respect to which the mind is not dictator but dictated to." (3) "The transcendence by reality of our present knowledge of it." We can ask significant questions about any object, questions which have an answer which could be obtained, but can not at present be given.

Other admirable bits which garnish this epistemological feast are, to name just a few, his treatment of the proper nature and method of philosophy, his elucidation of the logic of relative judgments, his discussion of "queer logics," and his six appendices. Incisive criticisms of such views as rationalism, empiricism, intuitionism, absolute idealism, new realism, critical realism, the copy theory of knowledge, and pragmatism, and of such writers as Descartes, Berkeley, Hume, Kant, Bergson, Broad, and Russell, add spice to the banquet.

Criticism of the views of the book is difficult for they were thought out slowly and carefully before being committed to print, and most of the objections which occur on a first reading, on a second are obviated. The treatment of concepts and the a priori is especially good. The greatest lack here seems to me to be the absence of any statement as to the ontological status of concepts. Different intelligent readers have found different theories implied, some classing the view as conceptualism, almost nominalism, others considering it a form of Platonic realism. This is due to Professor Lewis's method of expressing himself. In the earlier part of the book, interested in developing one aspect of the situation, he speaks of concepts as "the product of the activity of thought" (p. 37), and criticizes the Platonic view (pp. 70-71). But later on, with another aspect in mind, he tells us that "concepts are logical structures, Platonic ideas" (p. 269), and asserts that "on the one side, there is the Platonic heaven of our concepts, with the beautiful clarity of their next their patterned interrelations, and their absolute truth" (p. 307). Doubtless his real meaning as opposed to the expression he has given it involved it involves no contradiction, but he might have added an additional appendix

appendix giving us explicitly his theory of universals.

On the empirical side of his story, there is, I believe, more room for disagreement. The meaning he gives to the term "knowledge" is, I think, unfortunate, for it seems to exclude the possibility of certain knowledge, and if so, of all knowledge, for, as he tells us, probable knowledge must be based on some antecedent certainty. In his desire to deny that we have knowledge of sense qualia he says,

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"That only is called 'knowledge' which is verifiable and has a significant opposite 'error'" (p. 275). This seems to mean that to know anything we must be able to conceive an alternative which might be true. If he does mean this, his definition rules out certain knowledge and with it all knowledge. If, on the other hand, he means only that we must be able to conceive a certainly false alternative, then we can have knowledge of sense qualia, for we surely can conceive of propositions about them which are certainly false.

The distinction between qualia and objective properties is well taken, but may not qualia themselves be a kind of objects, subjective objects if you like? They are distinguishable and recognizable; we can talk intelligently about our own qualia, at least to ourselves, and on occasion, in reporting introspection, we try to tell others, say a psychologist, about them. Professor Lewis touches on this topic in Appendix D, "Mind's Knowledge of Itself," but a little fuller treatment would seem desirable.

The last two chapters, on probability, deserve special praise. They are, to be sure, inadequate (as Professor Lewis says, another volume at least as large as this one would be needed to do the topic justice), but they far surpass the usual dismissal of the subject with some such phrase as "postulates of induction" or "the assumption of the uniformity of nature." It is difficult to judge to what extent his solution is valid, but at least he has thrown much light on an obscure topic. No one has done so much with it since Keynes.

The most dubious part of his treatment of this topic concerns our knowledge of the past and the validity of memory. He tells us (pp. 149ff. and 337ff.) that these are not assumed, but are to be tested in the same way as propositions about the future. A past event, if it occurred, will have certain consequences in the present which can be verified. But this seems like only as if knowledge of the past. With memory assumed it is easy to see how propositions about the present can be verified in future experience. But without already assuming it, it is difficult to see how a present experience can verify an event remembered to have occurred in the past. At best the present can be such as to be consistent with that event's having occurred. It is as if the remembered event occurred. But it is always possible, as Russell somewhere suggests, that the world might have been created five minutes ago, with all of the memories that we have, created at the same time. It is to be regretted that, in addition to his discussion of knowledge of the future and its verification, Professor Lewis did not give us a more thorough treatment of knowledge of the past and its verification.

Positively the worst part of the book is the Index. Crucial

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terms such as "object," "quale," "concept," "category," are not listed there. To find definitive statements of the meaning of these terms one must hunt carefully page by page for himself. One remembers some especially illuminating passage, but to find it is often a matter of some minutes, if not hours. On the other hand, the Index lists such an infrequently used adjective as "ineffable," and the comparatively unimportant noun, "image." "Error" is to be found there, but "knowledge" is not.

These criticisms are obviously minor, and necessarily so, for it would be difficult to gainsay the extraordinary merit and importance of *Mind and the World-Order*. It is a real contribution to epistemology which no student of the subject can afford to neglect.

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The Major Traditions of European Philosophy. George Boas. New York: Harper and Brothers. 1929. Pp. 495.

Professor Boas has undertaken the notoriously difficult task of presenting an account of the history of occidental philosophy within the confines of a single volume of moderate size. The principal novelty of his treatment consists in the fact that he has chiefly endeavored to emphasize currents and connections of thought, and to relate philosophical movements to the general course of cultural, social, and political history. But there is considerable novelty, also, of emphasis. The account of ancient and medieval philosophy is compressed into four chapters, filling approximately the first third of the book, while nearly one quarter of the whole is devoted to philosophical developments in the period since 1800. To the history of German philosophy is allotted but a single chapter, carrying the story only down to Nietzsche. Italian, English, and French philosophy, however, are provided with two chapters each, and the account is brought down into the contemporary period. is also a chapter on philosophy in America.

At the end of the volume there are reprinted twenty pages from Max Müller's translation of the Critique of Pure Reason (the section on the Antinomies). This is followed by lists of questions on the material provided, together with suggestions of "topics for research." A section of bibliographical references for the several conclude the work. In the preface Professor Boas informs us mythical general reader." The nature of the appendices of college and university classes. The style, if less racy than that

of Mr. Durant's Story of Philosophy, is at the same time less scholastic than that of the familiar volumes of Rogers, Thilly, or Weber

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Professor Boas remarks that at least the "general reader," whose interest he has had in view, will "judge the volume by what he gets out of it, not by what he thinks I should have put into it." But what he gets out of it will, after all, be only what Professor Boas has put into it; and the fact is that he has definitely chosen to forego well-rounded and systematic exposition of even the more important philosophies, in order to include in his consequently highly schematic treatment very brief notices of a great variety of lesser individuals and movements. Thus, in effect, the reader is treated to a very rapid and sketchy view of the subject, under the guidance, indeed, measurably skillful and adroit, of an intelligent, active, and thoroughly "modern" expositor who touches a little on almost everything, but at the same time of one who goes not very much nor very deeply into anything.

I can not help wishing that Professor Boas had sometimes been more careful to distinguish statements that have a sound documentary basis from such as embody rather his own interpretation or comment. The untutored "general reader" can not be depended upon to suspect the tenuity of the grounds upon which it is suggested, for example, that the concern of Empedocles and Anaxagoras with the problem of the source of motion was determined by political experiences and preoccupations (p. 32), or that "god" in Xenophanes' conception "is rather a short-hand expression for the presumed fact that if all the laws controlling the behavior of the universe were written out they would form a single and consistent system, like that of Euclid's geometry (p. 14)." And there are other passages all too likely to mislead a beginner. When he reads, for example, that "as time went on, all change became looked upon [i.e., came to be looked upon] as change of position and in Aristotle, who made a specialty of the study of change, the word kinesis, which means literally 'motion,' came to be practically synonymous with 'change' '' (p. 14); will the novice not be led to the conclusion that Aristotle acquiesced in, and brought to completion, a tendency to reduce all change to change of position? Or when he reads that Aristotle "was, moreover, opposed to democracy and favored a monarchical order, like that of Phillip and Alexander the Great, whose tutor he had been (p. 57), will he not be tempted to suppose that Aristotle saw no merits in democracy, and voiced some explicit approval of the monarchical imperialism of the Macedonian régime? Will he sus pect from the statement that Francis Bacon "has almost a horror of contemplative science, i.e., theory" (p. 179); that Bacon was

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the author of such expressions as those of Aphorisms 124 and 129 of the First Book of Novum Organum? Will he realize from the vague statement that Bacon's "forms" "resemble Anaxagoras's qualitative atoms more than anything else" (p. 183) how clear it is that these "forms" are to be sought in the motions and configurations of the minute particles of bodies? Will he gather from the unqualified statement that Anaxagoras regarded Mind as "ubiquitous" (p. 33); that he also made it the one exception to the general rule that there are portions of everything in everything? Will he guess from the somewhat overheated rhetoric of page 44 that purely political motives probably had a large share in bringing about the prosecution of Socrates? And will he not conclude from page 293 that Kant simply accepted without further criticism the views of Hume concerning causation?

What solid basis is there, moreover, for the remark that Heraclitus "seems to have been . . . exiled and ruined when the populace uprose to institute a more democratic form of government" (p. 18)? What evidence is there that Parmenides taught "that the Whole is indescribable," or that he advanced in favor of this opinion the argument which Professor Boas attributes to him (pp. 15ff., also p. 87)? Is there any good reason to suppose that Empedocles held that during the "period of Love . . . peace and the arts would flourish," that "through the power of Strife" there would thereupon succeed "a period of warfare and destruction," to be followed in turn, under the dominion of Love, by one of "concord and civilization" (p. 26)? Why should we think it to have been because Anaxagoras conceived of "Mind as the controlling force of the world" or because he "exalted Mind by calling it divine" that he "offended the religious sensibilities of the populace" (p. 33)? Is it not more probable, in the light of the remarks in Plato's Apology (26), that it was rather because he denied the godhead of the sun and moon, and taught instead that the sun is simply a stone and the moon earth? Is it quite fair to say of Empedocles, without qualification, that he started the movement "to consider the mind as passive in knowledge" (p. 26), when in f when in fact it is one of his peculiarities to have insisted, in the case of case of vision, precisely upon the activity of the percipient?
Should the Pleto's Sym-Should the simple remark ascribed to Agathon in Plato's Symposium (199) posium (196), to the effect that where there is agreement there is justice he are no such thing justice, be distorted into the doctrine that "there was no such thing as justice." (p. 37)! And as justice; there was merely mutual agreement" (p. 37)? And has not the has not the sense of Republic 368-369, and in fact the actual procedure of the statement cedure of the work itself, been simply inverted in the statement that "since it work itself, been simply inverted in the statement that "since it is simpler to examine the individual than to examine the state, Plato begins with a description of the just man" (p. 52)? What, moreover, is the basis for the ascription to Plato of the sentiment "away with money; let all wealth be lodged in the state" (p. 54)? And is it altogether just to say of the Stoics, once more without qualification, that "emotions were to them lumped in a body as evils" (p. 78)? Again, why the extreme caution with regard to Saint Bonaventura: "He was, as a matter of fact, probably a member of the Franciscan order, though that is not certain" (p. 144)? I should have supposed his membership in the order, and indeed the fact that he presided over it as general from 1257 to 1274, to be quite as certain as any fact of his. tory. A few pages later, oddly enough, Professor Boas' scruples seem to have evaporated, for he now tells us that Roger Bacon was "frustrated" in the realization of his "program" "by Saint Bonaventura to whose order—the Franciscans—he belonged" (p. 179). But precisely at this point it becomes difficult to see to just what historical incident Professor Boas may be referring. Was Copernicus' use of simplicity as a criterion for astronomical hypotheses any more "unorthodox" than it was "novel" (p. 161)! Had not this criterion been current among astronomers, at least from the time of Ptolemy himself, and was not its relevance admitted quite as freely by opponents as by advocates of the Copernican system? (Cf. P. Duhem, Sozein ta phainomena. Essai sur la notion de théorie physique de Platon à Galilée, Paris, 1908). And is it the case, finally, that "the one mental being whom tradition recognizes is God" (p. 212)?

In sum, it seems to me that Professor Boas' book, whatever its merits as a rapid and lively outline for an already fairly well-grounded student, must be read, and especially by a beginner, with considerable caution.

Since writing the above I have received from Professor Boas the request that I call attention to two inaccuracies that he has himself noted too late for correction. The first is on page 120, where the reference to a "child labor law" should have been to a minimum wage law for women. The second is on page 407 where it is incorrectly stated that Royce was a pupil of G. H. Howison.

Perhaps it is not impertinent to add that the "Mirrors" of Vincent of Beauvais (twice referred to—pp. 128 and 152) are simply a somewhat disturbing multiplication of his one great Specklum (perhaps due to the fact that its title is variously cited by modern authors as Speculum Majus, Speculum Magnum, Speculum Quadruplex?—or to the fact that each of the principal divisions of the work is also entitled Speculum?); and that Mrs. Shelley's

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Frankenstein has been confused (on page 301) with the "dangerous plaything" which she described him as constructing.

RALPH M. BLAKE.

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The Use of Philosophy. John H. Muirhead. Cambridge: Harvard University Press. 1929. Pp. 208.

This is a volume of addresses by one who calls himself "an old hand in the business of seeking" (p. 20). Dr. Muirhead, Professor Emeritus in the University of Birmingham, England, came to the University of California in 1925 to lecture on the Mills Foundation. These addresses were delivered on various occasions in Berkeley, San Francisco, and Los Angeles during the two and a half years following his coming. They are full of the keenness of insight and the wholesomeness and maturity of thought with which readers of philosophy are familiar in Dr. Muirhead's more formal works. They are throughout tinged with his genial humor.

It is not easy to give a summary of the book, because it treats so many different subjects. It will be better to indicate the general attitude and some points of view which recur in different parts of the book.

Dr. Muirhead holds that "philosophy is a criticism of life—it searches and tries its parts by the test of their relation to that fuller and completer life which every man at his best point would live" (p. 15). It is "the criticism of man's fundamental interests" (p. 134). All men have some sort of philosophy: "Men can no more live without philosophy than they can live without the atmosphere which surrounds them" (p. 16). Dr. Muirhead urges a changed and better philosophy for our day, on account of the great "spiritual change" which is "the most significant fact of our time" (p. 18).

The author's diagnosis of what ails this age is penetrating. All our ideas are in a state of change. There have been other ages of transition, but in them only a few people were affected; now "all elasses are affected" (p. 53). Moreover, the most serious feature of the situation is this: "The men of those ages were filled with the vision of some great spiritual object: the Cross, Classical Beauty, this element of spiritual vision that has been largely lost" (pp. 54, to overwhelm his life" (p. 55). "It is an age of means." "Man's material conquests threaten differentiating mark of man's life, the presence of the idea of some tite" (p. 73). He emphasizes the creative and revealing power of tern which he weaves (p. 60)

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An interest in social philosophy permeates the book, as would be expected by those acquainted with Dr. Muirhead's earlier ethical This social interest assumes prominence in his and social studies. present lectures on "Social Life" and on "Philosophy and Poli. tics," and in his paper on "The New Alignment of the British Commonwealth of Nations" and his address on "The Scot Abroad" He believes in man's becoming conscious of a reasoned participation in social evolution. He maintains that "the individual is both creator and created," and that "there is no antagonism between the occupation of a place in society as a system of coöperating wills and the maintenance of his own individuality. The two are the same" (p. 86). He says: "The great social problem of our time is just this: so to control social forces that they shall minister on the one hand to individual self-control as the basic, spirit-sustaining virtue, and one the other hand to individual freedom and initiative in thought and action as the great progressive, spirit-furthering force" (p. 88).

The author's discussion of Progress and Democracy, though brief, is heartening. In spite of present-day misgivings as to much that is covered by the label of these two great words, he believes that "there is a prospect of a good deal more than half being the real stuff" (p. 37). It is philosophy's part "to insist upon Democracy as the name for short of that freedom and power of self-government which is an essential part of any life that can be called human, whether in individuals or nations" (p. 39).

Dr. Muirhead declares: "Faith in political ideals falls, in fact, like a great light across the history of the Western world" (p. 138). And he contrasts such political idealism with the modern "economic theory of history—'the stomach theory' as it might well be called" (p. 138). He puts his finger on the sore spot in contemporary civilization when he writes: "In society as in Nature, it is a question not of destroying force, but of using it for human ends, yoking it to the right idea" (p. 140). His interpretation, written in April, 1927, of what is working itself out in the British Commonwealth of Nations is based on a fund of detailed information and is very illuminating. His position in regard to world-organization is frankly stated: "For myself, I am all for the new idea of the unity of man kind and the organization of the nations under the common banner of human civilization" (p. 191), and he thinks this can be done without any loss of nationality or of the peculiar contribution which each nation makes to the world's life. This can be illustrated by the case of Scotland, who by her union with England has not lost her nationality; on the contrary, Scottish nationality has been enhanced and is more in evidence than before.

The book contains scattered through it many stimulating thoughts on the vexed subject of education. These show how constantly Dr. ould be on the velocity of the velocit ethical Multiplate is known as "higher education." Naturally his Phi e in his of it whites address on "The Life of Knowledge" contains much id Poli. British that bears directly on education. He has here a very serious exbroad." amination as to how it stands with the intellectual life in our day. cipation He recognizes the influences that tend to lower intellectual standis both ards. But he does not believe that "practical applications" are between the deepest aspect of "the whole movement of modern knowledge" ng wills (p. 117). He says: "You will be truest to the practical needs of the are the world about you (and God knows they are great) by being true to time is yourselves as scholars. Knowledge has the promise of the world on the that now is as well as of that which is to come" (p. 129). ing vir ative in

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Naturally in such addresses as these, the subject of religion comes up several times, notably in the lecture entitled "Religion" in the course delivered in Los Angeles. Dr. Muirhead's estimate of religion is the same large and generous one which we find in his earlier books and in his Preface to the second series of Contemporary British Philosophy. He admits that "religion has all the appearance of decay" (p. 91). He thinks "philosophy may perform a very real service in separating that which is essential to the reality of religious experience from the external forms and adjuncts which have got mixed up with it, and which the advance of science and philosophy is making every day more incredible" (p. 93). A second service which philosophy may render to religion is "in broadening its outlook, smoothing its asperities and sweetening its temper" (p. 93). In summing up this lecture he says: "I have tried to show that in whatever of its main aspects you take the life of the spirit, it deepens in your hands and leads you beyond what it seems at first to be and to contain. Each of them leads to a view of itself as rooted in a form of being deeper and more comprehensive in a form of being deeper and more comprehensive in a form of being deeper and more comprehensive in the state of the sive in which it finds its completion. Such a view, coupled with belief in the reality of this being, I call religion—the only religion credible to the modern mind" (p. 106).

Dr. Muirhead is sympathetic with American ideals, but he is a kindly and helpful critic. He is a little severe on the lack of real discussion among us and on the fact that such discussion as there is moves on so low a level. So also of our newspapers (p. 180). He is especially interested in our colleges and universities and the scarcity of genuine discussion in them—a lack which is not make up by having seminars and clubs. The interest in Dr. Meiklejohn's experiment at the University of Wisconsin on "a new type of curriculum largely founded on discussion" is taken as indicating "that

many are alive to the defects of the old one" (pp. 187, 188). The lack of real discussion in business and political circles is more extreme than in university society. The lunch-hour address, "another peculiar American institution," does not meet the need. It often is "a hurried twenty minutes' talk by the chosen speaker, sometimes half-drowned by the clatter of the dishes and with the eyes of everybody fixed upon the clock. A few desultory remarks are made. a sop is thrown to what might be called the discussional conscience. and men hurry off—to business" (p. 182). The lack of discussion in general is caused "by no lack of national intelligence or of vigour in its application" (p. 185). It is accounted for as due to means for "facile use of leisure" that have come with recent inventions, and due also to "the discontinuity and distractedness of home life" (p. 186). Of one thing Dr. Muirhead is sure: "If what I have been speaking of is a real defect in their national life, Americans will in the end find means to remedy it" (p. 188).

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#### JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. 55° Année, Nos. 5 et 6. Le physicien et le primitif: E. Meyerson. L'illusion de Sinsteden et le problème de l'implication perceptive: J. Paliard. De la nature de l'instinct: A. Spaier. De l'image au réel, dans la pensée de l'enfant: H. Wallon.

REVUE DE PHILOSOPHIQUE. 30° Année, No. 2. (Nouvelle Série, Tome I.) Les psychopathies ou anomalies mentales et l'eugénisme: Ch. Grimbert. A propos de l'attention: G. Dwelshauvers.

GREGORIANUM. Vol. XI, Fasc. 1. (S. Augustino). Saint Augustin et l'origine de l'homme: P. Galtier. Dieu pouvait-il créer l'homme dans l'état d'ignorance et de difficulté? Etude de quelques textes augustinien: C. Boyer. Augustine, Ambrosiaster and the massa perditionis: B. Leeming. Le concept de la vie religieuse dans S. Augustin: A. Vermeersch. Le "De agone christiano": A. D'Alès. Quomodo Divi Augustini theorie illuminationis saeculo decimo tertio concepta sit: B. Jansen.

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Levinas, E.: La théorie de l'Intuition dans la Phénomenologie de

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Husserl. (Bibliothèque de Philosophie Contemporaine). Paris Félix Alcan. 1930. 223 pp.

Félix Alcan. 1366. Personal Statement Ethics. An Introduction. Scott, C. A. Anderson: New Testament Ethics. An Introduction. (The Hulsean Lectures, 1929.) New York: Macmillan Co. 1930. (The Hulsean Lectures, 1929.) New York: Macmillan Co. 1930. Cambridge: Cambridge University Press. viii + 147 pp. \$2.00.

Contemporary American Philosophy. Personal Statements. Edited by George P. Adams and William Pepperell Montague. (Library of Philosophy.) New York: Macmillan Co. 1930. 2 volumes. 450 pp.; 447 pp. \$12.00 the set. ("The contributors to the volumes were selected on the basis of a referendum vote of the membership of the three Divisions of the American Philosophical Association. The Editors regret that either through the more or less accidental omissions in this hastily taken referendum or through sudden illness, as in the case of Professor Addison Moore, a number of colleagues whose essays would have been greatly valued are not here represented. Each contributor was requested to state his principal philosophic beliefs, the reasons supporting them, and the manner in which he had reached them." The following is the Table of Contents of the two volumes: Volume I—Editors' Preface; "Introduction": George Herbert Palmer; "Naturalism or Idealism": George P. Adams; "The Great Art which is Philosophy": Hartley Burr Alexander; "Philosophy and its History": A. C. Armstrong; "Nature and Reason": John Elof Boodin; "A Philosophic Mind in the Making": Harold Chapman Brown; "The Philosophic 'Credo' of an Absolutistic Personalist'': Mary Whiton Calkins; "The Faith of a Logician": Morris R. Cohen; "A Search for System": G. Watts Cunningham; "The Philosophy of a Meliorist": Durant Drake; "Philosophical Liberalism": C. J. Ducasse; "'In Vestigiis Veritatis' ": Walter G. Everett; "The Impersonal Point of View and the Personal': Warner Fite; "Some Second Principles": W. E. Hocking; "The Way of Opinion": Theodore de Laguna; "My Development and Present Creed": Joseph Alexandon Transport of Exander Leighton; Index. Volume II—"From Absolutism to Experimentalism'': John Dewey; "Logic and Pragmatism": Clarence Irving Lewis; "Problematic Realism": J. Loewenberg; "A Temporalistic Realistic Realist poralistic Realism': Arthur O. Lovejoy; "A Tentative Realistic Metaphy." Metaphysics': Evander Bradley McGilvary; "Confessions of an Animiet: "Evander Bradley McGilvary; "Empirical Animistic Materialist': Wm. Pepperell Montague; "Empirical Idealism", Detrocapet": Ralph Idealism'': DeWitt H. Parker; "Realism in Retrospect": Ralph Barton D. DeWitt H. Parker; "Realism in Retrospect": Em-Barton Perry; "Personal Realism": James Bissett Pratt; "Empiricism"; "Personal Realism": James Bissett Pratt; piricism'': Arthur Kenyon Rogers; "Brief History of my Opinions": Good Humanism": ions': George Santayana; "Realism, Naturalism, and Humanism": Roy Wood C., Singer, Jr.; Roy Wood Sellers; "Confessio Philosophi": Edgar A. Singer, Jr.; "Nature" "What I Be-"Nature and Mind": Charles Augustus Strong; "What I Believe'': James Hayden Tufts; "Metaphysics and Value'': Wilbur M. Urban; "An Unborn Idealism'': Robert Mark Wenley; "Confessions": Frederick J. E. Woodbridge; Index.)

Festschrift. Th. G. Masary, zum 80. Geburtstage. 7 Marz 1930. Erster Teil. Bonn: Friedrich Cohen. 1930. vii + 269 pp.

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#### NOTES AND NEWS

At the end of the academic year, June 30, 1930, Professor John Dewey will retire from active service in the Faculty of Columbia University and will become Professor Emeritus in Residence.

The Butler Medal, awarded in gold every five years by Columbia University at its Commencement Exercises for the most distinguished contribution made during the preceding five-year period anywhere in the world to philosophy or to educational theory, practice, or administration, has been awarded this year to Alfred North Whitehead, Professor of Philosophy in Harvard University, in recognition of his distinguished contributions to the philosophical analysis of natural science, the metaphysics of organism, and the critical reinterpretation of the classic systems of modern thought.

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Book Reviews. Journals and New Books. Notes and News.

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Meanings and their Exemplifications. Charles A. Baylis. The Applicability of Logic to Existence. John Dewey. Book Reviews. Journals and New Books. Notes and News.

#### Volume XXVII. No. 8. April 10, 1930.

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John Dewey's Theory of Judgment. JOSEPH RATNER. Experience and Dialectic. Frederick J. E. Woodbridge. In Reply to Some Criticisms. JOHN DEWEY. Book Reviews. Journals and New Books. Notes and News.

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### THE JOURNAL OF PHILOSOPHY

A REVIEW OF RECENT PHENOMENOLOGICAL LITERA-TURE

UNDOUBTEDLY the most prominent philosophical movement of present-day Germany is Phenomenology, of which Professor Husserl is the founder and leader. It is not a unified "school" in point of doctrine, but is due rather to the personal teaching and influence of Husserl. The development of the school has been determined mainly, until recently, by the development of Husserl's own thought. Beginning as a disciple of Brentano, whose Psychology from an Empirical Standpoint has remained a permanent influence on him, Husserl elaborated his earliest philosophical standpoint in the Philosophy of Arithmetic (1891). Mathematical interests naturally led over to problems concerning the foundations of logic, and to the publication in 1901 of the Logical Investigations, the first volume of which contains a repudiation and refutation of "Psychologism." This work represents a realistic-ontological manner of investigation, although Husserl later reinterpreted these investigations in the light of his systematically formulated phenomenological method, which leads on to the track of idealism. In its original version it is one of the great landmarks in the study of the foundations of logic. These investigations, and particularly those relating to "intentional" or meaningful experience, were extended by his studies of inner time-consciousness (1905–1910), which have recently been published under the title Lectures on the Phenomenolby of Time-Consciousness. The central theme of the lectures is the temporal constitution of pure sense-data and the self-constitution of the constitution of the constitu tion of the 'phenomenological time' which is basic to such constitution," Fell idealism htion." Following these studies a definite transition to idealism Following these studies a definite transition to make made, as seen in the Ideas concerning Pure Phenomenology. (1913), in which is method. The (1913), in which work much attention is devoted to method. an absolute spot. The divergence of the spot. The divergence of the spot. an absolute system of philosophy, his First Philosophy. The diversity of standpoint of philosophy, his First Philosophy. sity of standpoints and interests among his disciples is due largely to their failure. to their failure or refusal to develop along with him; and latterly 1 Edmund Husserl, Vorlesungen zur Phänomenologie des inneren Zeithbs. herausgaget 1 Edmund Husserl, Vorlesungen zur Phänomenologie des inneren 2014 phänomenologischen Von Martin Heidegger (Jahrbuch für Philosophie Heile, 1928). phänomenologische Forschung, Vol. IX, Halle, 1928).

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some of the younger phenomenologists, such as Heidegger, have shown evidence of independence in starting out on new paths.

In keeping with the pretensions of a system of philosophy Hus serl sought to establish the phenomenological method as an absolute or presuppositionless and certain method, which he introduces into his studies of time-consciousness. Whether this is a later addition is not stated, but that might well be the case, since the requirements of the later system are not involved on the purely descriptive level of consciousness. There are at least two senses in which the term "phenomenology" has been used: (1) In a narrower sense, as pure "eidetic" or essential psychology, or that discipline which had heen sought formerly by the exponents of empirical psychology and theory of knowledge; (2) in a wider sense, as transcendental phenomenal ogy or First Philosophy, in which all sciences are supposed to be rooted.2 The lectures on inner time-consciousness obviously below to the former, although the peculiarly fundamental nature of phenomenological time and Husserl's insistent use of his method of the "elimination of transcendences" give them direct significance for his First Philosophy.

In the introduction to the work on time-consciousness Hussell defines the problem of time as seen from his standpoint. It will perhaps be best to follow his account closely, since his method require that one abandon the "natural" attitude, in which one's view is directed at or to the object as an independently existing thing. Al though time is probably the best known of all things, its adequate understanding is very difficult, and must include placing objective time and subjective time-consciousness in their proper relationship to one another and the explanation of how temporal objectivity, and hence individual objectivity in general, can be "constituted" subjective time-consciousness. Husserl's purpose is the phenomen logical analysis of time-consciousness, which requires the complete exclusion of all assumptions and convictions concerning objective time or transcendent existence. "Objectively" every experience. as well as every real being, may have its place in the one and off objective time, which therefore includes the experience of the personal continuous and ception of time and the idea of time itself. It might be of interest to determine the to determine the objective time of an experience, or to compare the estimates of time-intervals with real time intervals. But these are problems for phenomenology. The real thing, the real world, is the nomenological determined henomenological datum, and neither is world time, or the time nature in the sense of natural science and also of psychology as the natural science and the natural scien natural science of the psychical. Now it might appear to the reads when Husserl speaks of the analysis of time-consciousness or of

<sup>2</sup> Cf. Farber, Phenomenology as a Method and as a Philosophical pline (University of Buffalo Studies, 1928).

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temporal character of objects of perception, memory, and anticipatemporal characteristics and already assumed objective time and then only tion, as it is subjective conditions of the possibility of time perception studied the subjective conditions. But what he professional through the perception studied the subject of time. But what he professes to take over is and of real knowledge of time, the existence of a world time, the existence of and of real and tracked over is not the existence of a thingish duration, and the like, but rather appearing time and appearing duration as such. These are regarded as being absolutely given, since doubting them would be meaningless: the external objects may or may not exist in truth, but the appearances themselves are indubitable. An existing time is assumed in the realm of appearances, but that is not the time of the experiential world, it is the immanent time of the stream of consciousness. Thus there is an essential change from the contingent realm of transcendence to the "certain" realm of immanence. The evidence that we have for the fact that the consciousness of a tone or melody exhibits a succession is given as an example of such inner certainty; it is such that all doubt or denial would appear meaningless. This is the basic distinguishing character of the phenomenological field of description, to which Husserl attains by means of a systematic elaboration of the Cartesian method of doubt, which requires the elimination of all transcendent existence. jective space and time, and with them the world of real things and occurrences, are all examples of transcendent entities which must be "eliminated" and "bracketed" if a descriptive science of pure immanence is to be realised.3

Beginning with the field of cognition as such, it is then the task of the phenomenologist to describe its content and trace the "constitution" of objectivity in it. Suppose that we look at a piece of chalk; we close and open our eyes. Then we have two perceptions, although we say that we see the same chalk twice. The contents of our experience are separated temporally, but there is no separation on in the object, which persists as the same. Thus there is duration on the side of the side the side of the object, and change in the phenomenon. The experienced perienced content is "objectivated," and then "the object is constituted out and the object is constituted out and the object is constituted out and out of the object is constituted out of the objec stituted out of the material of the experienced contents through meaningful apprehension." But the object is not merely the sum or complex. or complex of these "contents," which do not enter into it at all; it is more than content and other than it. The objectivity belongs to "experience," to "experience" and in fact to the unity of experience; expressed phenomenologically, "the objectivity is not constituted in the primary," containing the charprimary, contents (i.e., sensed contents), but rather in the characters of meaning (i.e., sensed contents), but rather in the characters of meaning (i.e., sensed contents). acters of meaningful apprehension and in the laws which belong to Thus Husserl states (p. 482): "The phenomenology which I had in mind of experiences in the in the 'Logical Investigations' was the phenomenology which I had in the stage of what is given what is given what is given what is given in the say and that is a closed domain in sense of what is given in inner consciousness, and that is a closed domain in

the essence of these characters." It is thus clear that the ultimate purpose of the phenomenology of knowledge is to construct a theory of objectivity on the basis of cognitive immanence, a setting particularly favorable for idealism.

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Husserl insists upon the distinction between the phenomenological (or epistemological) approach to the problem of time and the psr. chological approach. The epistemological question concerning the possibility of experience is answered by a study of the essence of experience; and similarly the problem of time leads back to a study of the "origin" of time—i.e., the primitive formations of time-consciousness. He is not interested in the psychological problem of the origin of time, or in the manner in which objective space and time perception arise in the human individual or species. For him the question of the empirical origin of time is indifferent; he is interested only in pure experiences with respect to their descriptive content and objective meaning. The phenomenologist does not fit the erperiences into any "reality." He is concerned with reality only in so far as it is meant, perceived, or conceived. With regard to the problem of time this means that the temporal experiences interest the phenomenologist. That they are in turn contained in a world of things in which they have their empirical being and origin dos not interest him; he knows nothing of that. On the other hand, it is important for him that "objective temporal" data are meant in these experiences. The description of the way in which cognitive acts mean this or that "objectivity," or, more specifically, the determination of the "a priori truths, which govern the "con stitutive factors of objectivity," belong to the task of phenomenology Husserl endeavors to delineate this a priori nature of time by investi gating time-consciousness and determining its essential structure an investigation which takes account of the specific contents of ten poral experience as well as the acts through which they arise. By the essential structure of time he means laws such as the following that the fixed temporal order is a two-dimensional infinite series, that two different times can never be at the same time, that the relational nature of time is insymmetrical, that it is transitive, that to every time there belongs an earlier and a later stage, etc. distinguishes these laws from the usual analyses of time is the context of pure context. text of pure consciousness in which they are elaborated, and what is here called "Consciousness in which they are elaborated, and what is here called "a priori" would ordinarily go by the name "formal properties."

One of the most interesting and instructive features of the work is the exposition and critique of Brentano's theory of the origin of time. Both because of its intrinsic value and its usefulness as an introduction to the descriptive side of phenomenology it would be well worth while reproducing in detail. However, a brief state

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ment of it will have to suffice for the present. Husserl's thoroughgoing and constructive critique of Brentano's theory shows his going and distinctions and adhering to them; and he is revealed at his best when he proceeds to concrete descriptive studies. Brentano believed that he had found an explanation of the origin of time in the occurrence of the "original associations" which are attached to all perceptions. That is to say, in any act of perception what is perceived remains present for a time, but not without modifying itself; in addition to changes in intensity and content, there is also the peculiar modification of being pushed back temporally. Thus every sensation of a tone, after the passing of the stimulus, awakens out of itself an idea which is similar and is determined temporally, and this makes possible the idea of a melody. This principle is then stated as a general law: a continuous series of ideas is naturally connected with every given idea, and in this series every idea reproduces the content of its predecessor—i.e., every new idea acquires the property of being past. Phantasy is therewith regarded as being productive, for it is held to create the factor of time in ideas. The origin of temporal ideas is thus referred to the domain of phantasy. The present sense-content of a given experience is caused by a stimulus, and if the stimulus disappears the sensation also disappears. But the sensation then becomes creative: it begets a phantasy-idea which is similar or nearly similar with respect to content, and is enriched by the temporal character. This idea awakens a new idea which is attached to it, and so on. The continuous series of such modifications is what Brentano means by "primitive" or "original" associations. In consistency with his theory he denies the perception of succession; we believe that we hear a melody and hence that we hear something past, but that is only an appearance which is due to the liveliness of the original association me. tion. The modifying temporal predicates he holds to be "unreal," only the determination of the "now" being real, and the real "now"

becomes unreal in turn through a series of infinitesimal differences. In his critique of Brentano's theory Husserl points out, as he never tires of doing, that it does not meet the requirements of a phenomenological analysis of time-consciousness. For although it transcendent presuppositions, with existing temporal objects which as another theory of the psychological origin of time. But Husserl conditions of the possibility of time-consciousness, for duration, succession, and changes are spoken of as "appearing." A "now" apthe consciousness comprising the present and past is a phenome-

nological datum. The question arises, whether the past really ap. pears in consciousness by means of phantasy. Inspection shows that a distinction must be drawn between time as perceived and time as phantasied; the difference between the perception of a succession and the remembrance or phantasy of a perceived succession must be explained. Insisting upon an examination of all the factors in. volved in experience, Husserl finds still further defects in Brentano's analysis, for the latter does not distinguish between act and content, or between act, content of apprehension, and the apprehended object. To which of these factors is the element of time to be attributed? As a matter of fact, we do not merely discern the element of time in connection with the primary or sensed contents of experience, but also in connection with cognitive objects and acts. An analysis of time which is limited to one level of "constitution" is not adequate and fails to grasp the essence of time as a real succession.

A complete descriptive analysis of the process of experience and particularly of the acts of knowledge through which objects are given must therefore be undertaken for the foundation of an adequate theory of time. Husserl asks: How are we to explain the apprehension of transcendent time-objects, whether changing or changeless, and which are extended over a duration? Such objects are "constituted" in a manifold of immanent data and views, which occur as a succession. Is it possible to unite these successively occurring representative data in a present experience? An entirely new question arises therewith: How, along with the temporal objects, both immanent and transcendent, is time itself constituted, how are the duration and succession of objects constituted? various avenues of description, which are here indicated briefly, and which require still further analysis, must be kept in view in the investigation, although all of these questions are closely related. It is evident that the perception of a temporal object has time, that the perception of duration presupposes the duration of perception, and that the perception of any time-form has its own time-form; and if we abstract from all transcendences, then only phenomenological time remains, which belongs to the irrefragable essence of perception Husserl goes beyond description and reveals his metaphysical tendency when he states that "objective time is actually constituted phenomenologically" and that "it is there for us as an objectivity and as an element of an objectivity only through this constitution" (p. 384). It follows that a phenomenological analysis must take account of the constitution of time-objects.

It will be of interest to follow Husserl in a typical example of his descriptive analysis, which may be justified on grounds of description alone; stripped of some of its vocabulary there would be

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10 suggestion of metaphysical implications. Suppose that a timeobject, a tone, for example, is viewed as a pure sense-datum. It object, a tone, and the unity of the entire occurrence recedes begins and story more remote past. In the recession I still have a into the ever more it in retention, and and into the a into the it in retention; and as long as the retention lasts the tone has its own time, it is the same, its duration is the same. I can attend to its aspect of givenness. It and the duration which it fills are known in a continuity of "modes," in a "continuous stream"; one point, or one phase of this stream, is called "consciousness of the beginning tone," and in that the first time-point of the duration of the tone is known in the mode of the now. tone is given—i.e., it is known now; and it is known as now as long as any one of its phases is known as now. But if any phase of time, with the exception of the beginning phase, is a present now, then a continuity of phases is known as "before," and the entire stretch of the time-duration from the beginning-point until the now-point is known as a past duration; but the remaining stretch of the duration is not yet known. At the close the end-point is itself known as a now-point, and the entire duration is known as past. "During" this whole stream of consciousness the one and the same tone is known as enduring, as enduring now. It was not known "before," in case it had not been expected; and it is "still known" for a time "afterwards" in retention, in which it can be fixated and remain as past. The entire stretch of the duration of the tone or "the" tone in its extension remains then as something "dead," with no creative point of the now to animate it; but it is continually modified and lapses back into "emptiness."

What has been described is the whole in which the immanent temporal object "appears" in a continuous stream, in which it is "given." However, to describe this mode is not the same as to describe the appearing time-duration itself. For the same tone with the duration belonging to it was not described but rather presupposed in the description. The same duration is a duration now being built up and built up, and then becomes a "past" duration: it is still known and is formed. is formed anew "as it were" in memory. The tone which now sounds is the same that the same of is the same tone which is viewed as past in a later stream of consciousness. The points of a time-duration remove themselves from my consciousness analogous to the way in which the points of a resting objections of the consciousness analogous to the way in which the points of a resting objection of the consciousness analogous to the way in which the points of a resting objection of the consciousness analogous to the way in which the points of a resting objection of the consciousness analogous to the way in which the points of a resting objection of the consciousness analogous to the way in which the points of a resting objection of the consciousness analogous to the way in which the points of a resting objection of the consciousness analogous to the way in which the points of a resting objection of the consciousness analogous to the way in which the points of a resting objection of the consciousness analogous to the way in which the points of the consciousness analogous to the way in which the points of the consciousness analogous to the way in which the points of the consciousness analogous to the way in which the points of the consciousness analogous to the way in which the points of the consciousness analogous to the way in which the points of the consciousness and the consciousness are consciousness. resting object in space are removed from me when "I remove myself from the object." The object keeps its place, and similarly the tone keeps it object. the tone keeps its time, every time-point is changeless, but it flees to the remotenesses of consciousness, the distance from the creative now becomes ever greater. The tone itself is the same, but the tone the mode has greater. "in the mode how" appears always as a different one.

There is Husserl's

There is much of a descriptive nature in Husserl's work which

shows how the theory of knowledge may be enriched by the adoption of the phenomenological method in the narrower sense of pure descriptive psychology. The discussion of the difference between retention and reproduction, or between primary and secondary memory or phantasy (p. 404), completes the correction of Brentano's theory of time as based on phantasy, and again illustrates Husserl's skill in finding great complexity where others see only simplicity, In this respect phenomenology does extend the vision of philosophy, There is a difference, for example, between the modification of consciousness which transforms an original now into a reproduced now. and the modification which transforms either an original or reproduced now into a past now. The latter passes by continuous gradations into the past; whereas there can be no talk of a continuous transition from perception to phantasy, or from impression to reproduction. Perception is built up on the basis of sensation, and sensation, which functions in the presentation of an object, forms a continuum. Similarly, the phantasmas form a continuum for the representation of a phantasy-object. From the standpoint of reflective consciousness we apperceive when we view the contents of sensation, even though we may abstract from all transcendent apperception; the "flow of time" or duration is presented as a kind of objectivity. An instance of Husserl's readiness to pass from the order of knowledge to that of reality is seen when he states that "objectivity presupposes the consciousness of unity or identity" (p. 324). In strict keeping with the method of description he should have said that our knowledge or experience of objectivity presupposes the consciousness of unity or identity. The same tendency is illustrated in his discussion of the stages of the constitution of time and of temporal objects (p. 427 ff.).

Husserl finally divides the sphere of time-consciousness into three levels, which are called "stages of constitution": (1) The first stage is the perception of empirical objects in the usual sense, including the thing of the experience of an individual subject, the intersubjective identical thing and the thing of physics. (2) From the phenomenological point of view the object is taken as a phenomenon and attention is directed to the process of perception. All appear ances and forms of consciousness have the properties of being now and receding into the past, properties which characterize all "subjective" time. Perception, memory, anticipation, phantasy, judg ment, feeling, the will—in short everything that may be the object of reflection—appears in the same reflective time, and in fact in the same time in which the perceptual objects appear. The appearances (3) are viewed as immanent unities in a "pre-empirical" time. (3) The third and last stage is that of the absolute stream of conscious ness, which constitutes time. Subjective time is regarded as being

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constituted in an absolute "timeless" consciousness, which can not be an object of cognition. This absolute consciousness is supposed be an object of sold constitution. In other words, the phenomena which to be prior to all constitution principle from the to be prior to be in time. They are not individual objects or events, and therefore it can not be said that they are present or past. Nevertheless, the absolute consciousness comes to givenness. Consider, for example, the appearance of a tone, and attend to the appearance as such. The tone appearance has its duration, and presents itself as an immanent object. But that is not the ultimate consciousness. The immanent tone is a constituted phenomenon, for with each tonal now there is a series of tone-nuances, in which each now recedes as a past. The perception of the present and the memory of the past may be apprehended in a comprehensive now. In the ordinary experience of the consciousness of objects one regards the past from the point of view of the present. But it is possible to grasp the entire consciousness of objects as a now, or to view it in its togetherness as "at once." Time-consciousness of this kind can not in turn be made to be an object of consciousness, for that would assign to it a position in a process of subjective time. The flow of absolute time-consciousness has a permanent formal structure. This structure is determined by the law that a now is constituted by means of an impression, to which a series of retentions and a horizon of protentions or anticipations are attached. A continuity of appearances belonging to the stream of consciousness is ingredient in a now, but this stream is not something temporally "objective." It is, in short, "absolute subjectivity" (p. 429), which as the most fundamental principle of experience defines at the same time a necessary condition for objects of experience.

On the basis of this principle, the emergence of all objects, including transcendent objects and things, is to be explained. The principle that all possible objects are by themselves as they are for knowledge is a reasonable assumption for philosophy; but Husserl goes a step further when he implies that objects can only be "in" the system land the system land to the sys the system knowledge, and are in fact conditioned and formed by an absolute conditioned and formed by an absolute consciousness. There can be no doubt that he had this goal nethod. That the very start, when introducing the phenomenological nethod. That temporal things are constituted and are as such dependent upon an absolute subjectivity, and that, furthermore, spatial things are constituted and are as things are constituted and are as the constituted an things are constituted similarly, since they are held to presuppose temporal constituted similarly, since they are held to presuppose temporal constituted similarly, since they are held to preserve temporal constitution (p. 446), clearly indicate a standpoint of transcent transcent (p. 446), clearly indicate a standpoint of descriptive genetic, transcendental idealism, which no amount of descriptive material can conceal.

The Lectures on Time-Consciousness illustrate both the strength weakness. and the Weakness of the phenomenological method. Even granting

all of the alleged advantages of this method-namely, that it fur. nishes a certain or indubitable realm for investigation, and that it makes possible the exact delineation of the facts of knowledge as such, thus deepening our understanding of the problem of knowledge it must be clear that dangers are incurred through the use of the method. Husserl's very language betrays his predisposition to treat the transcendent realm of existence, in which belief was suspended as a matter of method, as something reducible to pure consciousness, The very formulation of the problem of the constitution of objectivity in subjectivity indicates his metaphysical leaning. That the stream of experiences occurs in configurations, that cognitive contents are formed as unities amid multiplicity, may be taken as matters of fact, whether empirical or phenomenological. Furthermore, that they refer to objects "of" which they are appearances is recognized by Husserl: but the objects themselves are not "constituted" phenomenologically! The alleged constitution occurs only on the cognitive side, and it is sheer dogmatism to inject such a condition into the essence of objectivity. The phenomenological method is unable to restore the external world to its position of stability and independence, however far from "absoluteness" it may be in the natural view. The material realm of existence must be assumed for the world of experience, and no theory of reality can afford to dis pense with it. That it is impossible to get outside of the field of nature, even a phenomenologist will have to admit. metempsychosis is permitted as a methodological expedient, assump tions which are similar in principle to those of the "natural" attitude must be made on the phenomenological level. For one thing there is the supposition of consciousness in general, with a fixed essential structure. Strictly speaking, Husserl must begin with solipsism in the use of his method, for the only indubitable sphere is that of individual consciousness—the "egological" sphere. then it is at once apparent that only the actual experience of the present moment is "certain." It would be better to speak of the present experience as unavoidable; and nothing of any significant follows from it without special assumptions. Husserl's transition to intersubjectivity is a cumbrous and difficult operation, and depends in the last analysis upon the assumption of a consciousness in general. The trust is The trust in memory introduces another group of assumption of the "control of the control of the tions of the "essential" uniformity of phenomenological stances," which can not be explained away by an appeal to "essell tight insight" into the tial insight" into the structure of knowledge. The use of logical principles in the course of phenomenological descriptions may also be mentioned. Surely the be mentioned. Surely they must be employed in the ordering of any data, phenomenological or otherwise. In short, the much vaunted "presupposition" vaunted "presuppositionless" method assumes a great deal, and

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fails to reinstate the transcendent world except as a "constituted" world, a conclusion rendered plausible only by the ambiguous use of the concept of constitution and the tacit assumption of a subject-object limitation applied to all reality. The phenomenological method thus presents a strange appearance: for on the one hand, it enables us to extend the descriptive method to include all regions of pure consciousness, in the course of which the method is illustrated by truly admirable descriptions; and on the other hand, Husserl falls into the traditional error of supposing that pure consciousness may be the adequate source of all science and reality. It is to be hoped that the student of philosophy will not fail to recognize the positive advance Husserl has made in pure psychology and theory of knowledge, despite the tendency of the system to smother the method.

A few words may be added concerning the larger phenomenological movement, which is too complex to be subsumed under any one of the leading tendencies of recent philosophy. In celebration of Husserl's seventieth birthday a number of his disciples have contributed papers to a Festschrift.4 This work resembles the average "Jahrbuch" of Phenomenology in respect of the diversity of interests of the contributors and in revealing a lack of inner unity in the movement. The book contains what purport to be applications of the method of phenomenological investigation to the fields of esthetics, law, and systematic problems of philosophy. It will suffice to name Heidegger's paper on the principle of sufficient reason, Becker and Kaufmann on esthetics, Gerhart Husserl on law, Ingarden on the problem of idealism and realism, Lipps on judgment, Edith Stein on phenomenology and the philosophy of Aquinas, and Hedwig Conrad-Martius on the subject of color. Heidegger's paper is interesting and profound, but is, like most phenomenological literature, unnecessarily involved and difficult in expression. The phenomenological method appears least fruitful and most unnecessary if sary if not confusing when applied to law. There is no merit in its application its application to an empirical field. G. Husserl asks: How is law experienced? What attitude must one assume in order to bring it to givenness? He holds that "naïve" or natural experience is not capable of bringing it to "original self-givenness" for man. The well-known is a self-givenness to the self-known is a self-givenness to the self-known is a self-givenness. well-known objections to natural experience, which regards man as a part of the objections to natural experience, which regards man as a part of the world, are repeated, as illustrated by the statement that the world of doubt'' (p. the world, are repeated, as illustrated by the statement of the world given in natural experience is a world of doubt' (p. i.e. all the only thing 112) i.e., all that is given in it may be doubted. The only thing certain to man it may be doubted. certain to man is the fact of his experience and the assurance of the Hussen of this paper to the death. Husserl does not propose to attain in this paper to the regions from from the does not propose to attain in this paper to the "regions free from doubt." Another aspect of the problem in-\*\*Festschrift, Edmund Husserl Zum 70. Geburtstag Gewidmet (Ergänzungsband zum Jahrbuch für Philosophie, etc., Halle, 1929).

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terests him. The world in which man believes himself to exist in the natural attitude is rooted in his historical existence; it is a world in which the past continues to live as a determinative factor. He holds that the ascent out of this world and the transition to a world of permanent values can only be attained by means of an atti. tude which transcends the natural view of the world by "detempor. alising" it. The author curiously finds it impossible to remain in the stream of naïve (natural) experience and to attain to "trans. cendent" objects which persist as indubitable identities.5 It is unnecessary to point out that concepts and norms may be based on "natural" experience, and that they do not require a "radical and new transformation of our point of view." That is to say, if they are to be justified in the world of natural experience. The task is, as Husserl sees it, not to destroy the world, but to reveal the naïvely given world in its aspect of doubt and then to affirm it decisively as "perhaps being." Thus the goal of absolute certainty does not involve negating the world. The new attitude toward the world, by means of which one intrudes himself into it and yet remains detached, is called "ecstatic." This ecstatic attitude is defined as a non-naïve or unnatural point of view. Husserl attempts to justify the use of the term "ecstatic" by the claim that one really gets "outside himself" when he is lifted out of his natural realm of existence. He proceeds to state that the regions of religion and morals, art, and science are made accessible by means of the new attitude. His discussion of the field of law is no more plausible than the foregoing, because of the forced attempt to carry through a misleading method. Expressions such as "law has an abstract time," and law has an "ethical-religious character," are typical He states that the idea of the divine origin of law which was maintained in earlier cultures was due to profound essential insight (p. 125); and that any attempt to found the norms of law "naturally" -i.e., to attempt to derive them genetically from the "mundane rational psychical acts of will," must be regarded as fruitless in view of the transcendent being of law and its reference to a permanent attitude of will. This is indeed a departure from the original formulation nal formulation of the phenomenological method as a "methodological methodological methodolo cal expedient," and whatever limited virtue it possesses is certainly absent in the work of G. Husserl. Similarly, it is difficult to see how

as illustrated, e.g., in the work on *Time-Consciousness*, where allowance is made for the "constitution of non-temporal transcendences." He writes (op. cit. p. 449): "Values have no place in time. A temporal object may be beautiful and useful and may occur at a definite time. But such values as beauty, etc. have no place in nature and in time. They do not appear in presentations or is representations."

the approach of Hedwig Conrad-Martius to the "real-ontology" of the approach the at all fruitful. Her paper is a continuation of studies which had appeared previously in the Jahrbuch, and much of what which had been derived from pure consciousness some centuries ago.

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The recent work by Stieler on The Individual and the Crowd is less directly connected with this school, although the author belongs to the most recent generation of philosophers who are influenced by Husserl. His analysis of the relationship of an individual consciousness to other minds through empathy, and the study of the various aspects of group life and organization are carefully executed. The author is justified in urging the relevance of his work to the social sciences as well as to philosophy. With regard to method it is noteworthy that he begins with intersubjectivity, and not with the egological solipsism of an individual consciousness, for he holds that an individual is not only immediately certain of himself, but is just as immediately certain of other selves and their experiences. Stieler's work differs from the orthodox phenomenological literature in several respects: it is readable, he uses no more of Husserl's method than is warranted by the subject-matter, and he devotes more attention to the standard literature, even though due account is not taken of recent American contributions to social psychology and his horizon is somewhat limited by his philosophical preference. The leading feature of the work is the conscious attempt to clarify all of the fundamental concepts, such as "the social," etc., in a philosophical setting. In this respect, however, his attempt does not differ from much of the current critical work being done in the field of social psychology. All that the phenomenological method has to offer in this case is an unusually persistent effort to include all of the facts in the investigation, which can, of course, be accomplished by the usual means.

It is clear that there is no real unity in the phenomenological movement. It includes tendencies reflecting each of the major stages of Hussell. of Husserl's own development, the more independent efforts on the part of the younger phenomenologists of today, as well as thinkers the essence the essence of whose work shows no real connection with the movement. Husserl's own system may well be the last stronghold of idealism. Described on whose work shows no real connection and misidealism. But it is unfortunate that the interpretations and misinterpretations of his philosophy should continue to find expression in literature. in literature applied to fields which can best be studied in the clear light of a "natural" sun.

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MARVIN FARBER.

<sup>&</sup>lt;sup>6</sup> Georg Stieler, Person und Masse (Leipzig, 1929).

## THE PLACE OF VALUES IN ECONOMICS 1

T must be clear that the discipline of economics, ever since its rather recent severance from the classic concepts of eighteenth and nineteenth-century political economy, has made a determined effort to follow the path prescribed by the descriptive sciences. The word "theory" itself has become increasingly suspect with recent economists and is being supplanted by more characteristic and suggestive terms, "statistics," "quantitative analysis," and the like. Even more unpopular are the ethical and logical concepts that once constituted almost the entire fabric of the science. Economics—to cite, as an example, the contentions of Professor Davenport and Professor Mitchell—must develop technologically, not logically, and statistically, not ethically. It must seek for data, but shun standards, correlate facts, but avoid values, be descriptive, not normative.

If one should approach the economist with a plea for the recognition or the creation of values, if there is expressed the somewhat pious hope that economic data are to be organized in terms of economic welfare, he is politely referred to some of the other social disciplines, to sociology, perhaps, or to that vague field of social ethics. But should one follow the suggestion of the economist, with what is he confronted? It will be found that these other social enterprises are likewise engaged in a precipitous rush to the goal of description. Should economics, for instance, point to sociology for norms, it will be discovered that sociology is busily engaged in neglecting standards for case histories. The social sciences are yearning to be natural sciences. They are no longer content with remaining even historical descriptions; they must "go physical." No longer must the stigmas of "theoretical" or "deductive" of "introspective" or "arm-chair technique" or "closet approach" be placed upon the social sciences.

It must be clear also that the cause of this about-face may be traced to the antagonistic reaction of the social disciplines, particularly economics, to the classic ethical formulations of the early nineteenth century, coupled with the increased data that have resulted from a new and more technical methodology. The ideal of nineteenth-century political economy may be said to have aimed at the expression of ethical judgments in terms of logical classifications. Present-day economics is seeking the other pole, and in

<sup>1</sup> Read at the meeting of the American Philosophical Association, December 30, 1929, New York City.

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stead presents the description of phenomena in terms of passion-

less, judgment-proof graphs.2 Now, this perhaps exaggerated portrait must not be construed Now, this of the more recent technique of economic science. That criticism would be as foolhardy as it would be foolish. tainly the collection of data and the emphasis upon inductive processes must be welcomed and must be made the foundation of any enterprise that presumes to construct a rigorous discipline. However, the difficulty that must be suggested here is that found in the embarrassing situation in which values are placed by such a shifting of incidence on the part of the social sciences. Moral values have long since been expelled from the physical sciences, and now they are being squeezed out of the social sciences. Indeed, it would begin to appear that the exorcism of standards and norms is now a prerequisite for any enterprise which desires to achieve respecta-

This difficulty, therefore, presents itself: where are values to find a refuge and how are they to exercise control? Of course, the realm of values may again seek a haven from such snubbing in some remote region of ethics, carefully insulated from the more lowly disciplines. That certainly would be nothing new; ethics has always striven to inhabit such an ethereal kingdom and has suffered nostalgia when removed from the upper air, but characteristically it had sought that speculative world itself while now it seems to be banished there. The danger, then, that may result from the expulsion of values from economics and the other social sciences, is the re-introduction, from another angle, of the traditional cleavage between ethics and the humble sciences that was so characteristic a part of former philosophy. That cleavage must be recognized to be present whether the approach be that of classic theory which held that ethics was too exalted a creature to be hampered by the crudities of empiricist techniques, or that of the modern economic that a ern economist who refuses to be annoyed by the distractions that a consideration of standards would introduce into facts. tain effect of both approaches is to make values remote and inoperative, to segregate judgment from description, and to present us with a dilemmatic choice between a social science that is without values or values or a social ethics that is without facts. Yet we must not forget to a social ethics that is without facts. forget, to distort a famous line, that "facts without values are blind; values without facts are empty."

The danger that is suggested here is not one that need greatly

<sup>2</sup>If this paper appears to exaggerate certain distinctions and approaches, exaggeration is that exaggeration is realized as such and perhaps may charitably be interpreted

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concern the physical sciences. They have traditionally—that is since the birth of modern science—been exempt from the moral justification that has been demanded of the more hybrid social disciplines. Science has been recognized as disinterested and therefore privileged, and ideally ethics has been permitted to trouble the scientist as little as it has the artist. Such an esthetic point of view, however, will hardly carry over to the enterprise of econom. ics. Here, values are by no means implicit in the functions and operations of economic concepts, but are bound up inextricably with the meanings and operations of other disciplines of control that is, of extra-economic social and moral agencies. Take, for example, the concept of property or the distinction between earned and unearned income. Contemporary economics is attempting to operate with property as a phenomenon that is simply nothing more or less than the last step in a long and arduous evolutionary development. It is a given, an economic datum that is to be approached quantitatively, with perhaps at most a statistical investigation into its internal efficiency; that is to say, for purposes of economic science, it is to be accepted for what it is. Present-day economics likewise seems to be endeavoring to lump together all phases of income, avoiding distinctions between earned and un earned varieties of wealth. (Professor Davenport's definitions of capital and property are particularly suggestive in this connection.) Income, like property, is to be accepted as a concept resulting from the operations of economics, its values lying within the range of the science itself.

While such a procedure definitely represents the "scientifie" aim of economics, namely, the attempt to handle its material dispassionately without the slant or direction that valuation would introduce, still the benedictions that have been reserved for that approach in the physical sciences can with but little success, it seems be dispensed in fields such as that of economics. Property and income, that is, can scarcely be accepted with the same equanimity that is accorded in the natural sciences to paramoecia or quanta of catalysts. The subject-matter that concerns economics has often had too checkered a career to submit gracefully to the calmies that a quantitative or even an historical survey cheerfully bestows. In other words, the exemption of the data of physical disciplines from ethical standards is a unique privilege, and possible only be cause of the intrinsic values—perhaps dominantly esthetic—which are present in the creative operations and technique of science whereas perhaps because the social enterprises are too tainted with earth and Adam, with man and man's possessions, too humanistic use a word somewhat inaccurately), the divorce of facts from

values in such endeavors would tend to cripple their social significance and to make complete the isolation of ethics.

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This, however, must not be interpreted as a plea for the wholesale fusion of economics and ethics. It is rather the suggestion that, since it has been the insistence of much recent philosophy that, since concern itself with the more prosaic enterprises in order to proceed upon its path of evaluating with sufficient descriptive material, a converse demand should be made upon economics to the effect that it in turn be not too neglectful of the responsibility of judging. One can not ask too much of ethics. While it must attempt to grasp the significant findings of other studies, it can not be expected, for example, to delve into the technical and often dismal details of economics. Nor, on the other hand, can an enterprise such as economics be required to act as a surrogate for moral speculation. But it may be demanded that just as ethics must place no insulation between itself and the social sciences, so likewise these alleged descriptive techniques can not rightfully disavow all consideration of values. Maybe a plea for a little less division of labor would be in order, for so long as economics and ethics each concentrates rigidly upon its specific approach, the one being descriptive and the other interpretive, the significant marginal spheres which surround each enterprise will never be able to coincide. There can be little intelligent cooperation if each social science is to remain descriptively isolated, each one outdoing the other in its disparagement of directing elements.

It has been mentioned above that the slighting of values in economics and the other social sciences has been, in part, a reactionary shift away from the eighteenth- and early nineteenth-century ethical approach. That ethical approach may perhaps be typified by the concept of natural rights. It is realized full well that even a mention of natural rights is always dangerous. Any discussion of the topic, even the briefest—as this will necessarily be—must labor under a genuine embarrassment, the difficulty of examining a cadaver without being suspected of the mutilation or, on the other hand, of the resurrection of the dead.

Nevertheless, it seems in point here, as a possible example of a reconciliation of fact and value in political and economic theory, of rights. There must first be taken for granted, of course, in an approach to such a concept, an awareness of the complete disapments that have been employed against natural rights are now whose metaphysical status as a discrete and autonomous entity the problem of rights depends, is a concept quite questionable

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when tested by an organismic standard of social processes; that the concept "natural" is a very poor methodological instrument, since it demands a criterion essentially unempirical, intuitive, noetic, "rationalistic," and since, as experience has unmistakably shown it has been used to justify all manner of doctrine; that these rights were too rigid, too absolute, and likewise too many in number, that they "multiplied essences" and were therefore inapplicable for purposes of expediency and utility; that the whole concept of natural rights, instead of being any ultimate and eternal precious charter of liberties, was rather a clearly traceable historical phenomenon that came into such tremendous import largely because it was used as a weapon by eighteenth-century liberals; all this must be recognized as legitimate and familiar criticism of the natural rights approach to the relation of the individual to society, criticism, moreover, which reaches back to early nineteenth-century English jurists and political theorists, Bentham, Burke, Austin.

However, the thought that will be suggested here is that the metaphysical interpretation of the doctrine of natural rights, which perhaps well deserved the strictures that have been directed against it, was essentially a narrow and over-rigorous interpretation. It is quite true that "natural" as a political and economic criterion is unsound as a metaphysical concept, i.e., that there is no warrant for postulating an eighteenth-century apotheosis of Nature as the basis of social orders and economic systems, and unsound alsofor want of a better word—as an epistemological concept, namely, that there is no way of knowing when the "natural" state is achieved, that no bell rings at its realization. But when corrections and allowances are made in terminology, it may be recognized that "natural" means normative, and that the seeking after the natural is ethical and not metaphysical; it is a demand for standards and criteria, the symbol—perhaps hypostatized—for values And it is under the aspect of this non-metaphysical interpretation that the concept of natural rights, and likewise that of natural law, are being subject to a new evaluation, at least in certain disciplines such as that of jurisprudence.

The philosophy of law, just as that of economics, experienced in the nineteenth century a decided revolt against the absolutism of eighteenth-century legal concepts represented, for instance, by the natural law of Blackstone, and jurisprudence became concerned with an historical approach such as that of Savigny and later with what Roscoe Pound calls the emphasis of the "mechanical sociologists." The scientific spirit of the late nineteenth century could brook no philosophizing in law, and so the law became a social "language" or a set of evolutionary formulas which could be

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traced and discussed, but which it would be futile to attempt to traced and direct of the direct of the direct of the metaphysical approach by the eighteenth century resulted in this onslaught upon natural rights and natural law, so there has been onslaught philosophy a reaction against the over-historicism and neglect of values of nineteenth century jurisprudence. The work of the Natural Rights school in France, of Kohler and Stammler in Germany who, although opposed to the natural rights concept, oppose even more vigorously the mere descriptive and historical approach to legal theorizing, and of jurists such as Dean Pound and Justice Holmes in this country—also some of the writings of Professor Hocking and Professor Cohen-definitely point to a changing interpretation of some of the classic concepts, an interpretation that emphasizes the ethical rather than the traditional metaphysical approach.

Dean Pound can write that, "Already there is a revival of natural law, not of the natural law that would have imposed upon us an idealized version of the law of the past as something from which we might never escape, but of a creative natural law that would enable us to make of our received legal materials, as systematized by the legal science of the last century, a living instrument of justice in the society of to-day and to-morrow. Such a natural law will not call upon us to turn treatises on ethics or economics or sociology directly into institutes of law. But it will not be content with a legal science that refuses to look beyond or behind formal legal precepts and so misses more than half of what goes to make up the law." 3

This is, of course, not an essay in jurisprudence and the only point that is intended in these last paragraphs is that the criterion of "natural" is not one that has been summarily and permanently banished. It remains in ethics if not in metaphysics. It is a symbol of it bol of the cry for better things—for better laws, better social orders but the cry for better things—for better laws, better social orders but the cry for better things—for better laws, better social orders but the cry for better things—for better laws, better social orders but the cry for better things—for better laws, better social orders but the cry for better things—for better laws, better social orders but the cry for better things—for better laws, better social orders but the cry for better things—for better laws, better social orders but the cry for better things—for better laws, better social orders but the cry for better things—for better laws, but the cry for better things—for better laws, but the cry for better laws. orders, better economic systems. A "natural" order, a "natural" right, a "natural" law are postulated because men seek to find some sure basis for the things that "ought" to be. If they can point to M. point to Nature, then their demands seem more solidly grounded. Here in Nature, then their demands seem more sonary grandard and is the way things should be; look to the "natural" standard and then criticize, value, improve. It is true that such a standard may be admittedly a creative fiction; granted that there is no " of things, and there is no "natural" this or that in the nature of things and granted that is no "had i granted that, if there were, no one would ever know when it had been reached. been reached; still, "natural" has a significance that was certainly exhausted by eighteenth-centot exhausted; still, "natural" has a significance that was exhausted, perhaps not really understood, by eighteenth-central property of the pr

Law and Morals (University of North Carolina Press, 1924), pp. 87-88.

tury metaphysicians. The significance is basically that of a dissatisfaction with existing conditions, a discontent with mere description and the colorless technique of scientific statement, and is instead a reaching forward to ideals and goals.

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This point, however, will be misinterpreted if it is thought to imply a criticism of the descriptive, historical, scientific approach, It is simply the suggestion that the appeal to norms is one that is corrective of much of the narrowness that may result from too strict a worship of data and too studied a neglect of values. It is an appeal that refuses to accept conditions with equanimity simply because they are facts. All this seems to be suggested by "natural" and perhaps that is why the concept can not be for long disregarded. As a specific program, "natural" may be of little service, but as a recognition of the place of values, it serves an essen-The argument that is crudely expressed here is tial purpose. summed up, in connection with its presence in the problems of law, by Professor Hocking: "The law of any place and time is either subject to criticism or it is not. Unless the idea of 'improvement' and the idea of the 'law' are somehow incongruous, there must be at least a logical distinction between what the law is and what it ought to be. This is so evident to common sense that any opposing view would seem possible only by way of reaction from some atrocious misuse of the idea. It was the fate of the Natural Rights schools to provoke such a reaction, and to send an entire century of legal philosophers burrowing among the facts of law past and present for instruction which they agreed could not be found in ideals set up in total independence of history. Now, at the opening of still another century, we find common sense once more taking courage. The Natural Right-ists were right in at least one respect: the question, What ought the law to be? is a pertinent question, and they were even right in assuming that the human will had something to do about it."

It may be in place to mention just a word as to the meaning of a previous statement, namely, that the standard of natural is "admittedly a creative fiction." What is meant by this is that a recognition of a presumptive, hypothetical character in an approach to concepts such as those of natural rights and natural law will not only remove much of the absolutism that was so objectionable a feature of the classic doctrines, but will also prepare the only possible way for a re-admittance of such concepts into present-day theory. For example, it may be true that from the standpoints of law and politics means are endowed with no innate, imprescriptible, natural rights.

4 The Present Status of the Philosophy of Law and Right (Yale University Press, 1926), pp. 4-5.

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for purposes of social manipulation, they must be treated, and, for purposes been treated, as if they did possess such rights. This in fact, have been treated, as if they did possess such rights. This in fact, mayor from metaphysics to ethics, and an important transiis a translation An "as if" approach—that of a necessary fiction or a creation. An "as if" approach—that of a necessary fiction or a creation. tion presumption—postulates as a regulative factor, not as a categorical statement, that "the claims or demands or desires of a human being" (to use Pound's phrase) must direct legal and social, political and economic thought. Therefore, if such claims and demands and desires are to constitute the reasonable test of the efficacy of political structures and social orders and economic systems, the human being must be considered "as if" he possessed such claims independent of social arrangement. If not, criticism, because entirely internal, would die still-born.

A doctrine of rights is not one that can be unconditionally expelled from political and social theory, but it needs definite qualification, and this presumptive handling of the concept seems to introduce the most valuable type of qualification. It recognizes that rights are fundamentally a name for ethical claims flowing from the very nature of the individual, and that the concept of rights introduces a theory which includes man as an ethical factor as opposed to a view which excludes such a factor. It is an approach that concerns itself with values, but since the treatment of rights is hypothetical it does not attempt to read them existentially into the social structure. The eighteenth-century natural rights concept, from a metaphysical standpoint, was "pure" fiction, whereas the ethical, "as if" interpretation is a "creative" fiction, a moral presumption.

A presumptive approach, moreover, recognizes no hard and fast order that is eternal and unchangeable. Presumptions and fictions change; they are empirically determinable and mould themselves to fit the to fit the exigencies of utility. The natural rights of an "as if" world, for example, would possess the same characteristics as that "as if", world—they would be relative, variable, and not too enamored by the charms of rational absolutism. They do not constitute and interest posistitute an immutable ideal system to which the contingent, positive legal in the transfer of t tive legal right must conform, but they are concepts that vary according to the cording to their usefulness. They are "interests which we think ought to be secured; demands which human beings may make which we this secured; demands which human beings and dewhich we think ought to be satisfied," and those interests and demands are noted hands are neither universal nor eternal. Interests and demands are elastic. are neither universal nor eternal. Interests and therefore presumptive natural rights are elastic.

The absolute above really be said to The absolute character of the older doctrine may really be said to have been its harden have been its basic defect; it disturbed the late nineteenth century because science and history could discover no such absolute na-

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ture, and it is even more annoying to present tendencies which attempt to work with and to use concepts. A rigid system of absolutes is not an easy thing to manipulate, to operate with, and that handicap, rather than any metaphysical one, is the damaging feature of classic natural rights. But the characteristic argument against this rigidity of rights can not be brought to bear upon an interpretation that recognizes and demands that rights be made amenable to conditions which are in a state of transformation, an interpretation that holds that such concepts must be tested by a standard of social efficiency. As Professor Hocking states: "And now the name of 'natural right' can only creep into sight with the reassuring placard, 'changing content guaranteed.'"

This tentative, empirical quality that is thus being attributed to a concept that was originally absolute and intuitional is, of course, the only possible basis for a re-interpretation of the natural rights doctrine such as that which has been a characteristic theme in much recent jurisprudence. There can be no attempt made here at all to discuss that approach, but it seems clear that the more important of the French jurists, for example, who are concerned with the question take, if not a fictional, hypothetical attitude, at least the position that any acceptance of natural rights must be founded upon social utility, a utility, moreover, that is changing and developing. Whether it be the functional conception of Duguit or the plea for "idealism" of Charmont, "the reassuring placard, 'changing content guaranteed,' '' is always present. No one could be more bitter against the metaphysical notion of a social contract and of inherent, inalienable rights than Duguit, yet his essentially psychological postulate of an "individual" and of an "individual" will and mind as the basis of all phenomena' re-introduces a doc trine of rights as a necessary condition for that "individual's functioning",—such functioning, as he attempts to show, being 8 necessary element in the social structure. Charmont, likewise, speaking of the revived concept of natural law, states that "it reconciles itself with the idea of evolution, with that of utility It loses its absolute, immutable character, for it possesses only & variable content."

<sup>&</sup>lt;sup>5</sup> Ibid., p. 79.

and Demogue (Scott and Chamberlain trans.), Vol. VII of the Modern Legal Philosophy Series (the Boston Book Company, 1916); Part II, chap. IX; also chap. VIII. (Selections in these chapters are taken from Duguit's L'Etat. Le Droit Objectif et la Loi Positive)

Modern French Legal Philosophy, p. 146. (From Charmont's La Rendir sance du Droit Naturel.)

Professor Morris R. Cohen has written a very suggestive paper,

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"Natural rights" and "natural law," then, "can only creep into sight" in a greatly amended form. They must become empirical, elastic, workable. If all these qualifications really transpirical, elastic, workable into something entirely different, that form the traditional concept into something entirely different, that difference is essentially one of content; although their connotations have undergone a fundamental adjustment, the phrases and the "form" of natural rights may well remain—as indeed they have—a part of the literature and discussions of jurisprudence and political theory.

This lengthy digression concerning natural rights has been introduced simply as a suggested illustration of the resurrection of values in a social science. It has been recognized that a philosophy of law can not continue to concentrate solely upon descriptive or historical material, as was the ideal of late nineteenth-century jurisprudence. Values and standards, such as those symbolized by the ethical rather than the metaphysical significance of the concept "natural," can not forever be excluded. They return, under a radically different qualitative form, it is true, but still as representative of a perennial ethical plea.

The question, therefore, that must be raised here is whether economics and the other social sciences can continue to the goal of description and quantification with a resolute and calm determination to ignore anything that savors of valuation and judgment. Will they be more successful than jurisprudence and better preserve their physical science attributes? Or will ethics begin to creep back? Or should there be the definite and unconcealed attempt to thrust values again into economics? Shall a discipline such as economics which is concerned with probably the most vital and menacing problems that a social order is called upon to face be praised for accepting the material that comes to it without attempting to evaluate, to criticize, to amend?

Naturale Redivivum,'' (The Philosophical Review, Vol. XXV, No. 6, November, 1916, pp. 761-777), which contains an account of this newer interpretation as a second of the second second

Since the preparation of this paper there has appeared John A. Hobson's latest volume on Economics and Ethics (D. C. Heath and Company, to economic speculation. Hobson's book, which, as the foreword correctly some articles by Professor Ayres, Professor Fite, and Professor Perry; there Elwood, and, of course, Bonar's classic Philosophy and Political Economy gratuitous. Still, it is almost entirely historical), would appear to make this paper between economics and ethics from a slightly different angle from that of thesis, and certainly in a much less technical manner.

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Economics, since it is an enterprise that investigates man's at tempts to satisfy his material wants, may indeed be considered, in an age of industrialism and competition such as this, in an "ac quisitive society," as the "science of survival." Economics and no longer biology seems to be the technique that treats of the struggle for existence. Those fittest who survive and flourish in an acquisitive, competitive society must be studied, not by biology or even psychology, but rather as specimens subject to economic analysis The point is more than a facetious one. It suggests perhaps that the phenomena which are the materials for the operations of economics are too portentous, too indicative of unsolved moral prob lems to be accepted uncritically as the subject-matter of a descrip. tive or historical science. By uncritically is meant here specifically the failure to distinguish between the normal and the pathological a failure which is not present in some of the disciplines which economics seems to choose as models. Psychology, for example, does not confuse the healthy and the morbid; economics too often does And the cause may perhaps be located in the absence of norms and standards.

One more point: There have recently been launched attacks upon the over-specialization of contemporary science and technical knowledge—the late pronouncements of President Butler and President Angell are illustrative (the Encyclopedia of the Social Sciences represents a more overt realization) - and the plea has been made for the introduction of an intellectual synthesis, of an age of system-construction. Modern physics is being hailed in many quarters as the locus of such a physical synthesis. This challenge directed against an over-specialized concern with minutiæ, against an ignoring-of-the-forest-for-the-trees technique, seems to be even more applicable to the social sciences than to the natural sciences more applicable perhaps because that hyper-specialized technique does not appear to fit the social enterprises as neatly as it does the physical disciplines; great gaps of body show here and there. ever, this indictment of over-specialization should not be confined to the realm of fact itself, but must be expanded so as to embrace in its charge a criticism of the exclusion, upon the grounds of specialization of such as a second such as the second such as t cialization, of value from fact, an exclusion which banishes from the social sciences vision along with values. This warning of the dangers of such a type of specialization seems particularly perfinent in the case of nent in the case of economics.

It is felt here that economics may become richer and more vital if it puts aside, at least partially, certain feverish efforts to resemble physics or biology. It need not fear that a re-introduction of values would open the way for a wholesale return of all the colling.

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cepts of classic political economy, for, as has been noted, when a cepts of chastle import such as that of natural rights is resurdoctrine of the rational. There is seemed fights is resurrected, it responds to the rectional. There is scarcely opportunity in this connection to mention the significant alteration that such a new form effects in ethical as well as in economic operations. It new lord be suggested, however, that the recent emphasis, as in Professor Dewey, upon the operational point of view (using the expression made current by contemporary scientific thinking) as applied to ethics, namely, that values as well as concepts be tested in terms of their operations, may benefit perhaps from a greater degree of coincidence between two such disciplines as economics and ethics; there may be disclosed a new approach to their mutual operations which would tend to make the one more susceptible to direction and the other less void of content. Certainly, there need be no fear of such a coincidence unless economics, on the one hand, begins to realize that it has been operating largely with surface material, or ethics, on the other, that it has too often neglected material of any nature.

It is a somewhat depressing paradox that facts and values seem so often at odds in economics. The pendulum appears to swing from the thesis that the science must be a branch of logic and ethics, to the antithesis that it must shun the dim region of norms. Surely, there must be a synthesis that unites both in a common field of thought.

GEORGE RAYMOND GEIGER.

UNIVERSITY OF NORTH DAKOTA.

#### BOOK REVIEWS

The Logic of Events. An Introduction to a Philosophy of Time.

ANDREW P. UCHENKO. (University of California Publications in Philosophy, Vol. 12, No. 1.) Berkeley: University of California Press. 1929. x + 180 pp.

Dr. Uchenko has undertaken a heroic task—to reconcile the phenomenology of the spirit with the principles of mathematics. Blessed are the peace-makers; if they can enforce the peace they have dictated. Sometimes in logic as in life, it may be doubted whether divorce.

The:

This philosopher would eat his cake and have it. A Hegelian at heart, he would like to keep the fusion of logical with epistemo-problems which makes German metaphysics look so rational

and feel so spiritual; but he would also like to share in the triumphs of the mathematical logicians, who have been capable of theoretical advance just because they cast loose from "mental philosophy." The Logic of Events deals partly with logic, which does not bear very obviously upon events—and partly with events, but then the logic somehow evaporates.

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The only legitimate way in which the recent advances of logic can influence metaphysics is by giving rise to a logical philosophy. such as Professor Whitehead (our author's most frequently quoted authority) represents. But Dr. Uchenko's system is not logical philosophy; it is philosophical logic, which has no claim whatever to mathematical or scientific virtue. It begins with a metaphysical attitude, and employs alleged logical principles for its defense, whereas logical philosophy begins with a single-minded and rigorous devotion to logic, from which, by long acquaintance, a certain new metaphysical outlook is born. Doctrines with such different ancestries have nothing in common except words; but even those common words do not carry common meanings. It is possible to quote Whitehead, Johnson, Moore, and others in support of this modified Hegelianism, but all the quoted words have changed their meanings in the course of their migration from one context to another. This is a fact which Dr. Uchenko overlooks. He quotes from so many sources that his own point of view is obscured by the constantly shifting background of his argument. Were it not for his complete oblivion to the intellectual atmosphere which envelops a system and colors every one of its terms, he never could harbor the belief that he is talking about "concepts," "time," "order," "rhythms," "events," etc., in the same sense as the mathematical logicians, and regard the similarity of his phrases and theirs as an agreement of thoughts, or their dissimilarity as a disagreement.

The backbone of his argument is that any serial order is a kind of time—apparently, so far as we can see, because time is serial; that, therefore, implication, because it exemplifies a mathematical progression, is temporal. Of course, it is not temporal in the ordinary sense, but has a "time" of its own (evidently the esoteric mutterings of scientists about "different time-systems" fire the metaphysical imagination, as once the "fourth dimension" of some learned mathematicians over-stimulated the Society for Psychical Research). Now, it is dangerous to deal in time-systems if one is not brought up in the tradition of physics. It is even danger and "matrix," which are generally identified with that master piece, if one is temperamentally indisposed to think in its purely abstract and undialectical terms. Had The Logic of Events been

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conceived in purely Hegelian language as well as spirit, it might have carried a good deal of conviction for the adherents of philosophical logic. But to the ordinary logician for whom it seems to sophical logic. But to the ordinary logician for whom it seems to be intended, it is imponderable. The confusion of concepts with ideas, of generalization with abstraction (see p. 61), of cognition with implication (as when he is told, on p. 69, that "revelation is an addition to the logical ground as such"), and countless equally post-Kantian liberties, remove it from his world. Thus the heroic task of rendering the events of Hegelian logic in terms of a Whiteheadian logic of events, is still unaccomplished; the fault is not with Dr. Uchenko, but with the simple fact that a circle can not be squared.

RADCLIFFE COLLEGE.

#### JOURNALS AND NEW BOOKS

Scientia. Vol. XLVII, N. CCXV-3. Scienza e filosofia. Parte II<sup>a</sup>: Le varie soluzioni del problema della conoscenza, qualitentativi falliti per ridurre tutto il reale ad unità: F. De Sarlo. Ergebnisse von Beobachtungen und Versuchen zur Bestimmung der "absoluten" Erdbewegung: L. Courvoisier. Requirements of a Proof that Natural Selection has Altered a Race: R. Pearl. Moyen-àge et antiquité; N. Jorga. N. CCXVI-4. Scienza e filosofia. Parte III<sup>a</sup>: Che cosa può essere oggi la filosofia?: F. De Sarlo. Die seltenen Erden im Lichte des atomtheoretisch begründeten periodischen Systems: G. v. Hevesy. Le problème des causes finales: Ch. Richet. Problems of Population: J. A. Lindsay. N. CCXVII-5. Le macchie et i "canali" di Marte: M. Maggini. Ueber mechanische Theorien in Physik und Chemie: A. Korn. Le raisonnement et l'expérience dans les fondements des mathématiques: P. Lévy. Recent American Sociology: Ch. A. Ellwood.

Descamps, Baron: Le Génie des Religions. Les Origines avec un Essai Liminaire sur la Verité, la Certitude, la Science et la Civilization. Deuxième édition, revue, corrigée, coordonnée sur un plan nouveau et augmentée d'une étude nouvelle sur L'Ethnologie Dewit. Romanne Paris: Félix Alcan. Bruxelles: Albert

Dewit. Rome: Desclée & Co. 1930. xxii + 539 pp. 30 fr.

Katz, David: The Vibratory Sense and Other Lectures. (University of Maine Studies, Second Series, No. 14.) Orono, Maine The Cloth, \$1.25.

D'Aquino. Volume Primo: Guglielmo d'Auvergne a San Tomaso Volume Primo: Guglielmo d'Auvergne et l'Ascesa

(Publicazioni della Università Cattolica del Sacro verso Dio. Cuore. Scienze Filosofiche, Vol. XVI.) Milano: Società Editrice "Vita e Pensiero." 1930. viii + 283 pp.

Masnovo, Amato: Problemi di Metafisica e di Criteriologia, (Publicazioni della Università Cattolica del Sacro Cuore. Scienze Filosofiche, vol. XVII.) Milano: Società Editrice "Vita e Pen. siero." 1930. 50 pp.

Maunier, René: Mélanges de Sociologie. Nord-Africaine. Paris:

Félix Alcan. 1930. 220 pp. 15 fr.

Petronievics, Branislav: Hauptsätze der Metaphysik. träge zur Philosophie.) Heidelberg: Carl Winter's Universitätsbuchhandlung. 1930. 82 pp.

#### NOTES AND NEWS

The French review, Europe, has two recent numbers which are of special interest to students of philosophy. The issue of April 15, 1927 (No. 52), is devoted to Alfred Loisy with the following articles: "L'influence morale de Loisy" by Roger Martin du Gard; "Un Galilée de l'histoire" by Henri de Saussine; "Loisy exegete" by Ch. Guignebert; "Quelques aspects de la pensée religieuse et morale d'Alfred Loisy" by Jean Baruzi; "Alfred Loisy historien des religions" by Prosper Alfaric; "Le dernier livre d'Alfred Loisy" by J. P.; "Documents Bibliographiques."

The issue dated February 15, 1930 (No. 86), is devoted to Durk tents: "Quelques souvenirs" by C. Bouglé; "Sur Durkheim" by heim's contribution to sociology, with the following table of con-Georges Davy; "La sociologie religieuse de Durkheim" by Marcel Granet; "Lettre à R. M." by Raymond Lenoir; "Durkheim professeur de philosophie: by René Maublanc; "Note bibliographique sur l'oeuvre d'Émile Durkheim."

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Volume XXVII. No. 7. March 27, 1930.

Meanings and their Exemplifications. Charles A. Baylis.
The Applicability of Logic to Existence. John Dewey.
Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 8. April 10, 1930.

Concerning the Philosophical Consequences of the Theory of Relativity. F. S. C. NORTHROP.

Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 9. April 24, 1930.

Action and Certainty. WILLIAM ERNEST HOCKING.
Pragmatism and Current Thought. C. I. Lewis.
Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 10. May 8, 1930.

John Dewey's Theory of Judgment. Joseph Ratner.

Experience and Dialectic. Frederick J. E. Woodbridge.

In Reply to Some Criticisms. John Dewey.

Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 11. May 22, 1930.

Forms of Generalization and their Causes. Percy Hughes.

Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 12. June 5, 1930.

Book Reviews. Journals and New Books. Notes and News.

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## THE JOURNAL OF PHILOSOPHY

## HUSSERL'S PHENOMENOLOGICAL IDEALISM

TUSSERL'S Formale und transzendentale Logik 1 marks the end of the most promising movement in recent German philosophy. Starting as a reaction to the psychologized logic of the nineteenth century, it succeeded in reviving the logical realism which had been obscured by too much preoccupation with the empirical descriptions of knowing and gave a modernized version of the Platonic doctine of the autonomy of the purely logical or ideal realm of meanings. All of Husserl's earlier writings with the exception of the very first were not devoted to logic, but rather to prolegomena of logic. The only book on strict logic produced by a member of his school is Pfänder's Logik.2 But this last is not very much different from an ordinary book on formal logic. It is an extended treatment of subjects similar to those taken up, say, in the first part of Joseph's or Keynes' texts; and since it defines logic as the science of thoughts, as a discipline whose task is to analyze "the essence of thoughts, their ultimate elements, their structure, kinds and mutual relations" (p. 30), it is questionable whether recent English logicians who usually take their point of departure from the "proposition" would regard it as very strict. The development of a pure formal logic, however, was not Husserl's intention. He had early come to the conclusion that that could best be accomplished by the arithmetization of mathematics. What he really aimed at doing was to elaborate a fundamental method for philosophy, distinct from the from the method of natural science, which would give insight into the way all the possible objects of possible conscious experience were organized and related to one another. Would begin with whatever was given in the acts of consciousness, would extrude all reference to existence, strip off verbal and hypothetical association thetical associations dependent upon such reference and reach its conclusions by an intuition of the implication of the essences constituting the ideal tuting the ideal nucleus of what we are conscious of. Now this method operated nucleus of what we are conscious of the first method operated in its preparatory state, i.e., just before the first This article is an extended review of Husserl's latest work in the tenth labeled the Jahrhameter of the Jahr This article is an extended review of Husserl's latest work in the Halle, 1929 (Mar Nr. Philosophie und phänomenologische Forschung,

Halle, 1929 (Max Niemeyer Verlag), pp. 1-298. <sup>2</sup>The second edition of which has appeared in 1929 at Halle (Max Niemeyer

vision of eidetic relationships, with a logical scheme of its own. It this logic were itself made an object of phenomenological analysis if it were asked, for example, what evidence have the alleged rules of logical evidence, logic would seem to be swallowed up again in some kind of descriptive psychology. This, together with the fact that Husserl insisted that essences were always given in conscious ness, made those who believed in the autonomy of logic fear that empirical psychologism had been driven out in order to let a transcendental psychologism in.

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There are others who felt that in a world where logic was so effectively in use, it was useless to try to save for logic more than conditional autonomy, that the really important question was not whether logic was subordinate, but whether it was subordinate to ontology or transcendental psychology. Husserl was given a choice between some variety of Aristotelianism or some variety of Kantian-The Catholic philosophers hailed him as a continuator of the Thomist tradition and tried to make it appear that the only difference between Aquinas and Husserl was that between their respective theocentric and egocentric orientation. The Neo-Kantians, especially Natorp, pointed out that Husserl's doctrines were not so far re moved from their own if only he would less ambiguously admit that the act of mind involved in the intuition of essences was not a passive beholding, but in some sense a construction. In his Formale und transzendentale Logik which is supposed to be the definitive state ment of his standpoint, Husserl examines the relation between formal logic, ontology, and phenomenology. If I have understood his book aright, it aligns him beyond any doubt with the tradition of German idealism and leaves as a landmark to his philosophical memory only his critique of sensationalistic naturalism and some positive, albeit strained, analyses of ambiguities in the fundamental categories psychology.

The following summary and running commentary is intended an exposition rather than as an immanent criticism, for it seems to me that the Country than as an immanent criticism, for it seems to me that the Country than as an immanent criticism, for it seems to me that the Country than as an immanent criticism, for it seems to me that the Country than as an immanent criticism. me that the final position into which Husserl's thought develops its own best criticism. its own best criticism. In a writer so difficult to follow as Hussel repetitions are unavoidable and often desirable.

T

Husserl admits that by some ineautious words in his earlier with ings he had given a handle to some of his critics to raise the cry of "psychologism" against his "psychologism" against his analysis of pure logical meaning. fault, however, lay mainly with them, for they had failed to take his distinction between natural and transcendental psychology seriously. To deepen and clarify this distinction is one of the purposes of s own. If analysis, egged rules of again in the fact conscious-fear that et a trans

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book. Ideal meanings or universals can not be explained as combook. Ideal included a composite effects of experiences in space and time. Nor are they arbiposite enecus of are they arbi-trarily invented notational links between such experiences. Nor trarily in the constructions, postulates, fictions or what not of our are they free constructions, postulates, fictions or what not of our ordinary consciousness. Any one of these views represents what Husserl means by psychologism and nominalism which sin against the light by not recognizing the objectivity of essences. But to say that something is objective does not mean that it necessarily exists prior to and independent of any reference to some consciousness. That meanings are given in consciousness (and how else are they given?) does not preclude their being produced (erzeugt) in consciousness especially if we recognize different levels of consciousness. In what sense can we say that meaning is both an objective logical datum and a production? Husserl's answer reads ". . . it can not be denied that we are as exactly and originally certain of the characteristic of meaning of ideal objects given to us by our own evidential sense as we are of the real objects given in our sense experience. But on the other hand it can not be denied that those ideal objects are also produceable ends, final ends and means, and that they are what they are 'out of' a more original creation. That does not at all mean that they are what they are in and during this original creation. To say that they are in this act of original generation [ursprünglichen Erzeugung] is to say that they are in it as a certain intentionality, as a form of conscious spontaneous activity. . . . This mode of giveness in such original activity is nothing else than its own peculiar form of 'perception.' Or in other words, this original productive activity is the 'evidence' for ideal entities' (p. 150).

Whatever else this means, it means that the only difficulty we are faced with is to find out what kind of an idealist Husserl is. This is not a difficulty to be sneered at, for all of philosophic Germany has been trying for the last twenty-five years to make it out. It is not Platonic idealism, since Plato's Ideas were stored up in heaven and were the models, not the instruments, of demiurgic creation. It is not Berkleian idealism, since that is a theory of mentalism which denies on the instruments, of demiurgic creations which denies on principle the objectivity of non-mental ideal meanings. It is not Kantian idealism, for Kant stopped where he should have begun; instead of asking how logic itself was possible and submitting the ideal land of asking how logic itself was possible and submitting the ideal laws of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to transcendental analysis (230-231) he accepted the A. of logic to tran cepted the Aristotelian logic as something finished and self-justifying. As distinction fying. As distinct from all these Husserl's idealism is phenomenological idealism. It asks for the certification of everything found It asks how are in consciousness—even the objective meanings. It asks how are meanings in consciousness—even the objective meanings. It asks how are meanings in general possible? How is formal logic as such possible?

What evidence I What evidence have we that the laws of formal logic are what they

are, that what we regard as a meaning really is a meaning and not nonsense? What is the relation between our sense of evidence and that which is evidenced? What is the most fundamental of all evidencing relationships? To put such questions as these to logic, Husserl calls putting transcendental questions. The method of transcendental cross-examination is the phenomenological method; the answers, the content of phenomenological idealism.

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The status and function of this phenomenological idealism can be made clear if we remember that it is actually involved in the third thematic sphere of every science (152 ff). Anything that we "see" and which can be controlled by our normal superficial notions of evidence, can be made the subject of a science. Anything "seen" (i.e. intellectually understood) can, as a domain of possible experience, be organized in terms of immanent relationships. This is the first and original thematic level of science. We are never satisfied with a science no matter how complete until we subject it to criticism. When we subject any science to a criticism of the relations its results bear to the method of knowledge and reasoning followed in attaining them, when we examine the origin and place of the ideal meanings used by these methods and reveal the implicit theory of procedure which normatively controls empirical practice, and when finally, we become conscious of the higher psychic acts of "drawing inferences" or "concluding"—then we are in the second thematic sphere of a science. But there is still another sphere in which a science may be discoursed about. This does not concern itself with scientific method or results, but rather with an analysis of the activity of the konstituirende Subjectivität, or transcendental Mind, as it goes from one phase of the inquiry to another. A science does not spring ready-made from the bowels of nature nor from the mind of one man. What appears independent in it is in some way related to our reason, what appears "given" has already been "taken," what seems "to have" meaning is already endowed with it, what is "clear" has already been "clarified." Now what is this konstituirende Subjectivität to which the apparently independent is related, which "takes," "posits," and "endows with meaning," which clarifies and synthesizes? What are its secret and original sources of relevance and evidence in general? That answer can only be given by a new Kritik der Vernunft, by a transcendental critique of knowledge, which includes a supplier of knowledge which includes a supplier of knowledge. edge which includes formal logic as well as science. Kant's logical purpose would have been if he had thrown his ps chology and implicit metaphysics overboard. Really critical idealism must become phenomenological idealism. It is the most fundamental and genuine of all mental and genuine of all sciences, for without it we can not evel understand how analytic activities, for without it we can not evel understand how analytic criticism can affect our ordinary every des scientific procedure.

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This, as I understand it, is the crux of Husserl's position and I shall now try to give some of the details of the argument.

#### II

Both science and logic, to be really understood, must be brought to reflective self-consciousness by a theory which accounts for their This is especially necessary, says Husserl, in a world in which faith in reason and method have lost ground in direct proportion to their practical efficacy. We seem to be living in a world which grows more unintelligible, the more we are able to do with it. Husserl's study falls into two parts. Part one is devoted to the relation between formal logic and pure mathematics and justifies the identification of both in a formal mathesis universalis or a "pure apophantic analysis." Pure logic and formal ontology are equivalent. Since they show a structural correlation throughout they may be regarded as different aspects of the same science (p. 98). Formal ontology is distinguished from material ontology in that the central conception of the first is an analytic a priori; of the second, a synthetic a priori. Formal ontology is really the study of the realm of possibility; its correlative formal logic is the analysis of consistency. Part two of the book is devoted to the transition from a formal logic to a transcendental logic or Wissenschaftslehre. Transcendental logic is the study of the presuppositions which formal logic itself makes. It is here claimed that all the basic problems of meaning which are relevant to logic and science are problems, not of the natural self, but of a transcendental subject. In passing we may not the coincident belief of Weyl, influenced by Husserl, as well as by Brouwer, that the foundations of mathematics must be sought in a Fichtean ego.3

A. In his discussion of formal logic Husserl is under the disadvantage of trying both to defend logic from any connection with psychology and "real" ontology and at the same time preparing the ground for his own transcendental critique. Some of the arguments of the naturalists against the "purity" of logic which Husserl rejects in the first part reappear in modified form in the second. The argument will be that Husserl is argument will be easier to follow if it is remembered that Husserl is Waging war on two fronts against enemies who are as much opposed to one another to one another as they are to him, viz., naturalism and extreme analytic logical roots. lytic logical realism.

Pure apophantic analysis, or universal formal logic, is concerned For the ultimate analysis of the essence of judgment, content of judgment and characteristics and characte heat, object and character . . . we must derive our clues from men whose smile one can not many the can not hangs one can not mention among mathematicians without provoking a pitying fighte, e.p. Description of the essential control of the essential cont Fichte, e.g., Das Kontinuum, 1918, p. 2. Cf. also pp. 70–71–72.

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only with themes arising from the quest of consistency. Every prob. lem of consistency can be shown to be reducible to a problem of com. possibility. The notion of material truth does not enter here and is replaced by the relations of "inclusion" or "exclusion" of the various parts of a possible whole (47 ff). The validity of an analytic argument depends upon the reference of its component judgment to an ideal form posited or intuited by the mind. Stated proposition ally, two judgments are compatible when it is possible to make them integral elements of the unity of another clear judgment. We recognize this "unity and clarity" by our sense of immediate evidence. The evidence of the clarity of such a synthesizing judgment can not be derived from a knowledge of its certainty, for a great many things are certain which are by no means immediately evident This evidence can only be given by a principle of intuition. But says Husserl, arguing against a naturalistic realism, our intuition is not related to a "real ontology"; it does not reflect generic or invariant characters of the existing world. Criticizing Aristotle, he holds that these intuitions reflect the order of a formal ontology, of those antecedent conditions of existence won by insight into pure possibilities. Formal ontology must logically precede real ontology (p. 70). Choosing to ask what are the conditions of existence in stead of what are the conditions of genuine possibility, Husserl de clares Aristotle's conception of "first philosophy" to be inadequate The former dissociates formal and real ontology only because he assumes it to be self-evidently true that a significant proposition which does not depend for its intelligibility upon reference to any particular member of a class, is independent of the existence of the class itself. "The problem of formal ontology," he writes, "is what kind of a priori propositions can be made about the realm 'something-in-general' ' (Etwas überhaupt p. 132). In other words ultimate categories of logical predication can not be taken from the world of space, time, and man. From which world, then! serl's answer is given in the section on transcendental logic.

But, as has already been said, Husserl prepares his answer by showing that formal logic and ontology, although irreducible to real ontology, are not yet independent on their own account. He uses the formalists arguments against the existentialist position is order to save logic from vicious psychologism and then turns around and used the existentialist's arguments (in modified form) against the formalist—in order to prove that both the subject-matter and the form of thought are only differentiations in certain transcendental psychic acts. Psychologism, presumably, loses its still when it becomes transcendental.

The gist of the argument against pure formalism, as I under

stand it, is as follows. Logical categories are distinguishable among stand it, is as That is to say, they are meanings. As meanings they themselves. That is to say, they are meanings. D. a. is tions which give other meanings. themselves. The meanings they have implications which give other meanings. Reflection on these have implication on these meanings show that they are organized in specific ways statable in meanings statement in the second of categorial laws. These laws have formal ontological validterms of careful of everything-in-general. Everything-in-general, however, does not exclude, but must include individuals-in-particular; the things of this world must be part of the realm of possibility, since if they were impossible, they could not exist. Consequently, if categorial relations are valid distributively for everything in general they must be valid for the existences we have knowledge about. We have a right, then, to seek for the evidence of formal a priori relations in the perception of individuals. The invariant and constant relation in any act of perception might give us evidence of these formal a priori truths. We naïvely take these truths for granted without trying to analyze them out of our perception of individual things. But when the validity of any "supposedly valid" formal truth is questioned, can we continue in this naïveté? "In fact," claims Husserl, "the criticism of logical principles as the revelation of the presuppositions implicitly hidden in them will show that even for the evidence of formal universalizing, die Kerne lie, the residual elements of the sachhaltige or material a priori -8. H.] are not altogether irrelevant" (pp. 189-190).

Believing this does not prevent him from believing that every possible judgment is already true or false at the time of its utterance, that truth and falsity belong to the essence of any judgment as such (p. 175). How these statements can be reconciled with the acceptance of Heidegger's idea of the omnipresence of a Situationshorizont, or meaning determining context, is probably a secret of the transcendental Ego. Husserl admits that every judgment presupposes a certain range of relevance which can not itself be exhaustively expressed in a logical premise or series of premises, but which makes the acceptance of certain logical premises as over against others intelligible. He admits that this idea of relevance prescribes the sense and limits of those operations in intellectual inquiry which quiry which we later recognize as norms (177–178). He implies therefore that fore that a proposition can not be referred to as intrinsically true or false, or not proposition can not be referred to as intrinsically true or "intentional" false, or necessarily "either true or false" before an "intentional analysis". analysis" reveals the field in which, and the purpose for which, it operate that for Husberl is to operate. Let me hasten to add, however, that for Husberl like continuous terms like context, intention, and relevance have no naturalistic connotation. connotation. Whereas for the naturalist, logical characters arise in regulated inference controlled by the structure of certain ex-istential wholes for the naturalist, logical characteristics is the structure of certain existential wholes, for Husserl they are necessarily posited by our Ego

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whose acts will appear as foreign to the naïve consciousness of the scientific psychologist as to that of the mathematical logician. Husserl denies that logical characters of implication can be traits of an existential mode of empirical inquiry, for these characters are already involved in the process of inquiry from the very outset. The naturalist's answer to this and every other charge of circlarity is that implication can be viewed as a limit of a probability rela-

tion, which is not taken as a priori certain, but as hypothetically valid, subject to whether or not it can adequately organize or handle the existential affairs in which it is applied (Peirce) And if the laws of logic apply to any and every subject matter, then we know something about the nature of the world we live in and not merely something about our minds; we know that the world has an ontological order that becomes explicitly logical when it enters into inference. Refusing to accept this or any other naturalistic argument, and refusing to grant that formal logic can be intuitively certain of its own laws in any save a psychological sense, Husserl takes an extreme step. In order to get certainty in knowledge, he identifies the act of knowledge with the subject-matter of knowledge. Starting out with the admission that essences are transcendent to knowledge in order to explain the possibility of knowing what seems to be outside the act of knowing, he ends by converting what is transcendent into a pole of an immanent noetic

relation. The whole realm of essences becomes Ego-centrically oriented. Husserl and his naturalistic opponents are one in the denial that logic is self-contained, one in their emphatic claim that formal analysis is incomplete without a theory of evidence and experience. But it is in the character of the experience invoked that

all the difference lies. For despite Husserl's contention that phenomenology is jenseits Naturalismus und Apriorismus, experience in his philosophy is nothing if not, literally super-natural. His great positive merit in the eyes of one who disagrees with him is to show that one must choose some type of experience as a source and setting for formal logic

In the Logische Untersuchungen Husserl had shown that every judgment, no matter what its modality, referred to an ideal content of meaning which conditioned the very possibility of significant utterance. "I doubt whether," "I am sure that," "It is impossible that," can not be completed as Cadgments unless the what which is intended to be doubted, certified, or denied has a possible ideal existence. Or, to put it is little differently, the possibility of drawing a judgment depends upon absence of contradiction in the connotative constituents of what is judged. We have already seen that Husserl believes both

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# HUSSERL'S PHENOMENOLOGICAL IDEALISM

in the autonomy of meanings and their ego-centric reference. in the autonomy with a Gegenstandstheorie. He holds that the ideal ex-He istence of the objects of meaning is itself conditioned by the unity of possible experience (p. 193 ff). The unity of possible experience is the primary basis of all judgment. It is the community of meanings and intentions in which everything stands in some objective relation to something else. What does not fall in the realm of this possible experience is nonsense. For example, "red +1=3" may have the psychological and grammatical form of a judgment, but it lacks reference to an objective content in the domain of possible expe rience. It consequently has no meaning. Impossible of being either true or false, it is not a proposition. The letters and counters of symbolic logic can only be sensibly used because some experienced ob jective relation is presupposed to hold between them in some con text (p. 195).

Opposed to this view is the doctrine which, before the publication of the Ideen zu einer reinen Phänomenologie etc., used to be identified as Husserl's own, viz., that formal logic has an apriority which involves no reference to any factual subject-matter. The laws of logic are the invariant rules of combination of whatever is formally possible. And so long as one does not raise questions as to the meaning, consistency, and application of logical rules, it is the easiest position to take. But Husserl insists upon raising these questions as if intent upon crushing the old logical Adam within himself. He uses three types of argument—all used by the hereditary enemy, the naturalists, before him—against the sharp disjunction between possibility and actuality. First, that behind this play of elaborating possibilities is the assumption of the existence of a World in space and time which serves logically as the base of operations and as the ultimate control of our excursions into the realm of possibility. We get our possible constructions by varying the details of a world already given. If the possible is not to be correlated in some world already given. lated in some way with the actual, how is it to be distinguished from the nonseas. the nonsensical? Second, wherever formal logic analyzes its fundamental control of the not avoid a mental concepts such as implication and validity, it can not avoid a theory of an interest of the concepts such as implication and validity, it can not avoid a concept of a concept of the concept of th theory of evidence, a theory of knowing or inner (subjektiv gerichtete) experie tete) experience indissociable from the existence of human beings.

This is not possel in dissociable from the existence of human beings. This is not psychologizing logic. It is a reminder that if the laws of logic must be must be mind—or some logic must be psychologically possible, the nature of mind—or some aspects of it aspects of it—must be part of logical theory. The third argument is indicated not be part of logical theory. is indicated rather than stated explicitly. Logic as a formal study of all possible worlds is necessarily applicable to this world and has a place in the series of positive sciences. To deny to logic the name of a positive sciences. of a positive science is to fall into the error of regarding our natural

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sciences as purely existential. Every science contains more than reference to what is actual. Every hypothesis before verification is a statement of possibility. The possibility is drawn from some other segment of existence regarded as relevant.

This sounds very much like a return to Aristotle and certainly reflects the influence of Geyser and the revived Thomist philosophy The conversion of logic into a propodeutic of ontology (p. 256) and the interpretation of "pure form" and "pure matter" as limitim concepts of some concretion in discourse (p. 262) seem also to point to a modified Aristotelianism. But there are at least two considerations which indicate that Husserl is basically as far from Aristotle as any of the classical German idealists and that like them he is compelled to tie up the loose ends in his thinking by reverting to a "logical solipsism" distinguishable only in minor details from the early positions of Fichte and-horror horrorum-of Hegel First, there is Husserl's retraction in the last appendix to the book of all the concessions made in earlier pages to a material ontological logic. For that is what the claim to have justified the traditional conception of formal logic as a logic of pure consistency means. He takes over the logistic conception that all laws of logic are tautologic (derived by negating a contradiction), and, instead of squarely facing the problem of a test for consistency, substitutes the equivalent idea of compossibility, as if compossibility any more than comsistency were a matter of intuition and did not depend ultimately upon an exhibition of the structures, operations, meaning, complexes, or what not declared to be compossible. I can see no significant cant difference between Husserl's theory of consistency and that of Kant's. Second, and far more important as far as Husserl's distance from Aristotle is concerned, there is the whole conception of transcendental phenomenology, which is a deeper and more radial defence of the constitutive activity of consciousness.4 To an exam. ination of this doctrine we shall now turn.

B. The transition to what Husserl understands by transcendental phenomenology can best be given in his own words. "Every science has its field and works with a theory of this field. In this field it gathers its results. But it is the scientific reason which creates [schafft] these results and it is the experiencing reason which creates this field. That holds good for formal logic too, in its manifold levelled relations to existence and ultimately to applicable world, and to its theory of ordered powers of generality applicable to any special theories. Existence, theory, and reason do not come together by accident and they can not be presupposed to have accidentally fallen in together even out of an 'unconditional and they said the science of the presupposed to have accidentally fallen in together even out of an 'unconditional and they said the presupposed to have accidentally fallen in together even out of an 'unconditional and they said the presupposed to have accidentally fallen in together even out of an 'unconditional and they said the presupposed to have accidentally fallen in together even out of an 'unconditional and they said the presupposed to have accidentally fallen in together even out of an 'unconditional and they said the presupposed to have accidentally fallen in together even out of an 'unconditional and they said the presupposed to have accidentally fallen in together even out of an 'unconditional and they said the presupposed to have accidentally fallen in together even out of an 'unconditional and they said the presupposed to have accidentally fallen in together even out of an 'unconditional and they said the presupposed to have accidentally fallen in together even out of an 'unconditional and they said the presupposed to have accidentally fallen in together even out of an 'unconditional and they said the presupposed to have accidentally fallen in together even out of an 'unconditional and they said the presupposed to have accidentally fallen in together even out of an 'unconditional and they

4"Alles Seiende konstituiert in der Bewusstseinssubjektivitat," p. 205.

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litioned p. 205. universality and necessity.' This very necessity and universality must be investigated as that of the logically thinking subject—of my subject, for I can only submit to a logic which I myself have clearly subject, for I can only submit to a logic which I myself have clearly subject, because for the time being we are thought through—of my subject, because for the time being we are not talking of any other reason but mine, of any other experience and theory but mine, and of any other existence save that manifested in my experience and which in some way must be intended in my field of consciousness if I am to produce theories by means of it...

"Just as in daily life so in science (when it has not been misled by a 'realistic' theory of knowledge into misunderstanding its own activity), experience is the consciousness of being with the things themselves, of directly grasping and having them. But experience is not a hole in a space of consciousness through which a world existing antecedently to it shines through. Nor is it a mere taking over into consciousness of something which is foreign to consciousness. For how can I even sensibly say that this is so without 'seeing' it myself and therewith 'seeing,' experiencing, both consciousness and that which is foreign to it? And how can I conceive it as thinkable?..." (205-6). Not only is the that of any subject of discourse given in experience, but its what. Its modality and objective content can not be intelligibly taken out of experience. "Kein Sein und So-sein für mich, ob als Wirklichkeit oder Möglichkeit, es sei denn als mir geltend" (207).

Does not this prolegomena to a transcendental logic apparently contradict some of the positions Husserl took in his discussion of formal logic? Had it not been maintained that logical laws are invariant forms of all possibility? And was not my experience only one possibility among others and hence subject to laws of possible and hence subject to laws of possibl sible arrangement outside of it? Did not the doctrines of "truths in themselves," "truths forever and for every one," "invariance of meaning," taken over from Bolzano, set the criteria of what I can truly experience even before I can experience it? Husserl recognizes this apparent contradiction, but is undaunted by it. allem Erkenklichen voran bin Ich," he insists. All that has been said about necessary and universal criteria of validity has first been thought has thought by a self. Everything is related to this self in specifically different by a self. different ways. It is the "intentionaler Urgrund" of the given world and all its at least the and all its other selves; if not the generating matrix, at least the self-enclosed self-enclosed continuum, the indispensable referent of whatever is or hay be consolir with this position. hay be conceived. Husserl is in deadly earnest with this position.

The following by the fear of being The following passage seems wrung from him by the fear of being misunderstood (12) misunderstood "Whether easy or not, . . . whether it sounds mon-strong or not . . . . which I must stand strong or not, it is the fundamental fact upon which I must stand

and from which as a philosopher I can not for one moment look away. To philosophical children it may appear as the eerie nook haunted by the ghosts of solipsism, psychologism, or relativism. But the real philosopher, instead of running away, prefers to illumine this dark corner" (p. 210).

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The first step in the illumination is both inevitable and familiar My every-day psychophysical self is distinguished from my trans. cendental ego, for which it is only an object of discourse. The self that the philosopher is, the I of his demonstration, is not identical with the self which someone else loves.<sup>5</sup> But since he can not be lieve that in being loved he is only loving himself, there is a strong temptation to believe in another transcendental ego which, although not identical with the loving psycho-physical self of another, is a close relative to it. But how can one transcendental ego admit the existence of, no less know, another transcendental ego? That seems to be impossible by definition. And the second step, very familiar in the history of German idealism, is taken. The first ego discovers that by some miraculous conception it is pregnant with other egos Since the transcendental ego is posited by the necessity of understanding pure logic, empirical considerations are declared to be useless and we are compelled of necessity to posit levels of conscious ness and phases of development in the transcendental ego in order to derive some of those empirical considerations we pretended to ignore. By a play on words, an "intersubjective objectivity" of selves is created so that one can say that the existence of other selves is implied already by my own and yet that they are in 10 fundamental sense independent of my own. Out of a witches' cauldron of verbiage comes the conclusion "Alle Objektivität dies Sinnes ist konstitutiv zuruckbezogen auf das erste Ich-fremde, das in der Form des 'Anderen,' d.h. des nicht-Ich in der Form 'andered Compared to this, Fichte is a model of lucidity. The bogey of solipsism, Husserl declares can be laid by a proper in terpretation or exegesis (Auslegung) of the contents of my consciousness. Offhand one would say that given Husserl's definitions, this is just what he can not do, but he refers us for the details of this "novel" theory of Einfühlung to a forthcoming work.

By revealing the way in which the community of transcendental egos is organized we discover all the possible forms of intentional reference. This gives us the schemata of the a priori relationships with which the mind works and explains why the method of weensforschung can be effective. It is not the particular features of any object which the mind intuits that is important for transcendental analysis, but the way in which the mind operates through

<sup>5</sup> The illustration is mine.

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familiar. y trans The self identical not be. a strong although ner, is a dmit the at seems familiar liscovers er egos. underd to be nsciousin order nded to rity" of of other e in no witches tät dies ide, das anderes y. The per inny con-

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and upon objects. What the mind gets to know are the forms of its and upon object constitutive activity. But since from Husserl's own own a prior nothing can be save as an object of mind and since the acts of mind can themselves become objects of mind, how justify the distinction between the particular content of consciousness and the a priori organizing activities of consciousness without introducing aspects of an empirical world? Object and act may be distinguished by regarding objects as a series of acts grown cold, but generically they are made of the same stuff and the mind must be just as active in positing itself into material for reflection as in reflecting on the manner in which it has already posited it. Even God, says Husserl, is a result of my consciousness, the end product of the milling of the subjective a priori (p. 222). There is no external world to be opposed to the activity of consciousness. When we speak of the real world we mean by it a constant presumption that our experience will continue to run in the same way. What right have we to "presume" this! Is it any more certain that the mind will continue to function in the same way than that the natural processes will always show the same pattern? The difficulties of induction and causality do not become any less acute if the world is sunk into consciousness and all the things of this world construed as objects of primal activities. In an effort to avoid the imputation that the traditional difficulties of subjective and critical idealism affect his own position, Husserl distinguishes sharply between transcendental phenomenological subjeetivism and psychological subjectivism. The latter tries to build up the world on the basis of psychic elements given to the natural experiencing self or soul. But for phenomenological subjectivism, the natural self or souls as well as its elements are themselves Weltbegriffe, are intended as existing things, are themselves objects and problems of transcendent apperception (p. 223). But what Husserl fails to see is that if the logic which repudiates psychological subjectivism is sound, the same logic applies even more strongly to his own phenomenological idealism. It is easier to believe or, more conservatival. servatively, it is not more difficult to believe, that a table exists only when it is when it is perceived than that 2+2=4 is true only because a mind—true perceived than that 2+2=4 is true only because a mind—transcendental or Divine—becomes ultimately conscious of

Meanings for Husserl are ideal. But ideal meanings can not be accepted as spontaneously arising from nowhere or as subsisting Just as the existence of the real world is a problem which has the sistence of the structure of the knowing mind, so the subsistence of logical meanings is a problem which must be solved by reference to the activity of a mind of still higher order (p. 234).

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Kant was "transcendentally naïve" in assuming logic to be some. thing absolute and primary, in regarding it as something upon which philosophy could build. Instead of putting questions to it, instead of challenging its rational sovereignty and compelling it to seek refuge in a transcendental justification, he uncritically used it as the touchstone of his own attempted justifications of science and mathematics. "How is logic in general possible?" can only be answered by the investigations of transcendental phenomenology. But is the latter itself critical? Suppose someone asks, "How is the world of transcendental phenomenology in general possible!" That is a question, responds Husserl, which disappears in the insight that this world has a reality which follows from its very Idea, since it is the construction of a consciousness that can not be negated without assuming consciousness again (p. 237). Another disguised revival of the ontological proof.

The logic of the most ultimate phase of this most ultimate of disciplines is a personal logic, although what the ich and the mich means here can only be understood by the metaphysically blessed The a priori is openly characterized as a solipsistic a priori. jective logic," we read, "is for us a first but not the last logic." Husserl does not hesitate to call this personal and ultimate logic "the only philosophy, the only genuine science." All being, all categorial determination is relative—and relative to transcendental subjectivity. Only this last is absolute "in sich and für sich," only it is free from presupposition and prejudice (p. 241), on the ground, that there is nothing unrelated to the transcendental ego, that there is nothing which controls It. It can only be described in the oxymoron of mystics. From this transcendental ego not only is the intersubjective objectivity of selves and all actual and possible worlds derived—or better, organized, since they are already contained in the ego—but it has an infinite capacity to reflect itself and its forms on many levels of self-consciousness. "The whole phenome nology is nothing else than the scientific self-reflection of transcent dental subjectivity, a self reflection (Selbstbesinnung) which ad vances from the fact as such to the consciousness of the essential necessities and from that to the Urlogos from which all that is logical springs. All prejudices at this point necessarily fall away since the consistent never intentional forms set in their proper place in the consistent progress of self-consciousness. All criticism of logical knowledge . . . the criticism of knowledge in all types of science function of reflecting evil. function of reflecting subjectivity. All objective being and all truth has its ground of being and all truth has its ground of being and knowledge in transcendental subjectivity. "(p. 242) tivity . . . " (p. 242). Impartial evidence, or that which is absorbed

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lutely grounded, can only be found here. The criteria of evidence in the particular sciences are relative and uncertain. They receive their credentials only when both the methods and results of the particular science in question can be fitted into a summa philosophia. Despite certain differences in detail, and despite Husserl's own denials, who can fail to recognize the Substance of the Hegelian Absolute spinning madly in its thematic web of self-consciousness? Every knot in the web is understood when it is construed in terms of a transcendental grammar. And the great mystery of the relation between the syntactical constructions of the Absolute and the grammar of our own broken speech dogs Husserl's analysis in the same way as it did all mystical emanationists before him.

To really develop a theory of evidence, according to Husserl, we must not content ourselves with our ordinary working rules of validity which naïvely imply something transcendent and normative, we must go on to ask under what conditions the material we are investigating lends itself to the use of evidence, we must make explicit those psychological acts and powers, e.g., comparison and recollection, involved in the process, and finally test our principle of inference in the light of the transcendental subject whose "ego-logical powers" they are. "The ultimate criticism of knowledge in which everything else is rooted is the transcendental self-criticism of phenomenological knowledge itself" (p. 255). Again Husserl asks us to wait for the details of this ultimate criticism.

#### III

If all this strikes the English reader as "romantic madness," it is well to remember that Husserl's doctrine in its present form is an original variant of classic German idealism and follows from the same refusal to accept the given and from the same illicit and halfhearted desire to deduce existence. A rationalism which seeks to make things intelligible by regarding them as the deposit of an anthropolic description of the state of the s thropomorphic logic is indistinguishable from the extremest of magical romanticisms. Husserl would probably vehemently deny this relationship to Fichte or Hegel and point out that nowhere does he directly that the phenomedirectly attempt to deduce the existence of things, that the phenomenological method is directed to the contents of consciousness and does not does not even raise the question of reality outside of it. But when we are told on he derived we are told that the organizing forms of this method can be derived from the from the way our transcendental ego—in conjunction with other egos—functions, when we are told that the content of that conclousness is given with and within an ego-logical subject and that these made are made or with an ego-logical subject and that these are made explicit by an introspective exegesis, in what essential respect does it differ from Hegel's substantializing of the self-renewing activities of the Subject into an Absolute Whole? The only difference that Husserl's refusal to use the word "existence" makes, is that instead of the world and its history being the autobiography of God, as it was for Hegel, it is now more like the ordered dream of a sleeping God.

All this is the inevitable outcome of Husserl's logical method. Whitehead's last books show that he, too, using this method in part is on the road to the same conclusions. Whoever claims that he can investigate essential relationships between ideas, or universals or essences, independent of ultimate reference to, or control by, exist. ence, is driven on to define these ideas as possible objects of some consciousness in order to intelligibly distinguish them from that which has no character at all. But since whatever can be known must be an object of consciousness, the mere "having" of objects in consciousness (Gegenstandsbewusstsein) is taken to be the same as "knowing" them. Knowing, then, becomes the mind's consciousness of the presence of objects. And if all the possible objects of consciousness are defined as transcendental Mind or Divine Mind or the Community of Mind-real knowledge is given by the Mind thinking itself. It is easy to see that all the logical difficulties involved in the belief that there is something outside of mind to be known, and that this something has an intelligible order-which the resort to the standpoint of immanence was designed to solve-still remain as difficulties in logical or phenomenological idealism. If both my natural mind and the objects of my natural thinking are swallowed up in a great Mind in order to explain the possibility of natural knowledge and the logic of that knowledge, my mind and the things it knows can not be the same parts of that Mind even though they bear the same name. The search is renewed and turns into the torturous labor of jumping from one imagined level of Mind to another. My original mind and the little knowledge it has, although baptized by the same name, get separated and lost in this series of transcendental discoveries of one level of Mind in another, and probably never find one another again, since in the nomenclatural dusk each is the other and this other is something else.

Knowledge is a unified act. But it can not lose sight of the fundamental duality of the knower and the known involved in that act without making specific knowledge impossible. Boasting of his independence from all psychology, Husserl has fallen victim to a defective psychology of the knowledge relation. Our choice is not be tween a logic with psychology or a logic without psychology, but rather between a logic with good psychology and a logic with bad psychology. That, to my mind, is the moral of this exposition of Husserl.

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IT is a generally recognized principle of method that the solubil-It is a great extent upon the accuracy and precision with which the problem is formulated. Nowhere is this truth more significantly exemplified than in the problem of knowledge. The reason for this lies not so much in the fact that most philosophical questions are derivative and thus incapable of being answered until the epistemological problem has been solved, as in the fact that the problem of knowledge is itself peculiarly difficult to formulate. If the problem is carelessly stated, the solution may prove to depend upon metaphysical considerations of such a complexity as to make its attainment practically impossible; if greater care is taken in the formulation of the problem and it is expressed so as to be more or less independent of metaphysical questions, the modified statement may make the problem purely academic and not at all descriptive of knowledge as it is known to be; if, after much thought, the problem is stated in such a way as to retain its aloofness from problems of the nature of reality and yet formulated so as to be descriptive of the actual cognitive event, the solution may perhaps, upon these grounds, prove to be impossible; if, finally, with infinite care, the problem be defined so as to avoid all of these difficulties, the solution may follow so readily as to justify the suspicion that it has been derived by a mere analysis of the terms in which the problem has been stated and hence is verbal rather than real.

In a former paper 1 I attempted to prepare the ground for the formulation of the epistemological problem. The outcome of this analysis was essentially negative, namely, that thought could never completely encompass existence and that existence could never enter into thought. This was demonstrated in two ways: (1) By an examination of the nature of particulars and universals. of these was shown to have a formal nature and a material nature, but it was found to be impossible to reduce the formal or material nature of particulars or the formal nature of universals to the material nature of universals. Hence, since thought is always of the material aspect of universals, it followed that particulars can never entant aspect of universals, it followed that particulars can never enter into thought and that the formal nature of universals can never 1 can never be thought. This was shown to mean three things: (a) we can not be thought. we can never think about the particular objects of experience directly: (h) rectly; (b) we can never think about the fact that particular objects are increased about the jects are instances of universals; (c) we can never think about the fact that universals; (c) we can never think about the fact that universals are exemplified in particular objects. (2) By

<sup>1</sup>This Journal, Vol. XXVI, No. 14, pp. 365 ff.

the large number of philosophical difficulties which it serves to explain. Among these were discussed the general recognition of an irrational element in reality, the impossibility of defining existence, the irreversibility of abstraction, the ontological proof of God's existence, certain aspects of symbolic systems and the notion of class.

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It is with the more positive implications of this position that I shall be concerned in this paper. Thus I shall attempt to show how (1) the essential confusion and difficulties of the traditional analysis of the cognitive event prepare the way for (2) the proper statement of the problem of knowledge, and (3) how this problem may be solved in one of its aspects, viz., the extent to which thought may be said to be "about" existence.

I

The most general analysis of the cognitive event discloses four elements which may be characterized respectively as the knower, the known, the knowledge, and the knowing. This descriptive terminology is particularly advantageous because it reveals the elements of the cognitive complex in the proper relationship without saying any more about their essential nature than is necessary. It does not say, for example, that the known is a world of matter, or of ideas, or of sense qualities, or of appearance, nor does it demand that the knowing activity should be limited to experience or reason or intuition or divine insight. It does not limit the content of knowledge to a realm of psychical events, nor does it interpret the knower as a self or person. But this analysis does reveal clearly the structure of the cognitive event as a whole and the general relations of the elements composing that whole, and thus enables us to express in a form agreeable to all investigators those principles which must be taken as basic in the consideration of the epistemological problem. For example, the distinction between the knowledge and the known expresses the representative character of knowledge, i.e., that in knowledge which may be "mine" I am nevertheless acquainted with something which is other than the knowledge and therefore may not be "mine." The grammatical forms employed in the characterization suggest that knowing is an activity performed by an actor upon a passive subject-matter; thus we are enabled to express the fact that the knower, the know ing, and the known constitute a complex cause which brings about an effect, the knowledge. Yet at the same time this terminology permits us to discuss the nature of the known apart from either the knowing or the knowledge and thus takes cognizance of a gent erally recognized exists and thus takes cognizance of a gent erally recognized exists. erally recognized epistemological principle, viz., that the known

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is not in any way transformed by the operation of the knowing activity and as a consequence knowledge may be truly informative with regard to the nature of the known.

Following the outlines of this formal analysis English empiricism, by giving a specific content to each of these elements, unwittingly determined the direction of thought upon the epistemological problem for several centuries to come. The presuppositions
of this point of view are well known. By the known is meant a
realm of physical objects, located in time and space, and possessing
the qualities of solidity, extension, rest and motion, weight, color,
taste, sound, etc. By the knowing is meant the activity of the
sense organs of an individual in receiving the stimuli from the
physical objects, transmitting them to the brain and thus into the
mind. By the knowledge is meant a realm of psychical objects,
located in time but probably not in space, and possessing none of
the qualities belonging to physical objects.

The difficulties of this position are obvious and have been repeatedly called to our attention by the critics of empiricism. Since objects enter into knowledge as ideas it follows that we can know only ideas. Since the relation between the idea and the object can not be known, the adequacy of knowledge can never be determined. There is no place for introspective knowledge. Since truth is a form of correspondence there is no place for "fictional" knowledge, e.g., perfect triangles, perfect levers, frictionless motion, and other abstract concepts of the sciences. Because objects are always particular the problem of the nature and origin of abstract ideas seems to be essentially insoluble. Because the connections between objects are always particular it is difficult if not impossible to account for the origin and necessity of certain universal propositions.

But despite the limitations and inadequacies of this solution, much of the psychological analysis which was carried on in support of and in opposition to this position has contributed materially to our understanding of the cognitive situation. It is readily seen, for example, that although the distinction between idea and object existent (the neo-realists have called our attention to this fact), obliterated. For even though we knowledge and the known is not knowing and the ideas, the awareness and the content. This entitive event, for although the awareness is peculiarly my own the known as the content and the knowledge as the awareness of the content then we experience certain difficulties in connection with

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the problem of error. Furthermore, it seems to be impossible to tell whether the content ever occurs in the absence of the awareness or the awareness in the absence of the content, so that by the awareness we may mean simply the content. It will be impossible to consider these difficulties at this point. One of the essential advantages, however, of the definition of knowledge in terms of awareness is the fact that it enables us to exclude from the sphere of knowledge all implicit cognition in the form of behavior reactions, reflexes, instincts, and all kinds of selective responses where there is no definite conscious correlate.

A second important result of the psychological analysis instigated by empiricism is the knowledge that there are different kinds of content of which we may be aware. The division of mental states into sensations, percepts, images, and concepts furnishes the basis for this differentiation. So far as psychological content is concerned, these reduce to three: particulars apart from universals, universals apart from particulars, and particulars interpreted by universals. Thus even if we can know only ideas, any idea which we know must be a pure particular, a pure universal, or a complex consisting of both in a certain relationship.

#### II

Granting these truths the problem of knowledge may be formulated as follows:

By the known is meant: (1) A realm of particulars differing as to content, but similar as to form, i.e., manifesting the form of existence. Of each particular we can say that it is the sort of thing which exemplifies a universal though we can not say (through the mere awareness of particulars) what the universal is or whether there is any such universal. We may be aware of the form of a particular without being aware of the universal of which it is an example. Thus there may be particulars which are ultimately irrational because there is no universal of which they are examples. (2) A realm of universals differing as to content, but similar as to form, i.e., manifesting the form of subsistence. Of each universal we can say that it is the sort of thing which is exemplified in particulars though we can not say (through the mere awareness of universals) what the particulars are or whether there are any such particulars. We may be such that the particulars are or whether there are any such particulars. particulars. We may be aware of the form of a universal without being aware of the particulars which exemplify it. Thus there may be universals which are ultimately non-existential because there are no particulars. there are no particulars which exemplify them. (3) A realm of events 2 differing as to contain the ultimately non-existential of events 2 differing as to contain the ultimately non-existential of the exemplify them. events 2 differing as to content, but similar as to form, i.e., manifest

<sup>2</sup> The term "event" has taken on so many associations in recent philosophical literature that it must be employed with some degree of "aution.

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ing the form of reality. Every event is a particular-universal complex and possesses five aspects. There is the particular content and its form as an existent, the universal content and its form as and its form as a subsistent, and the relation which connects the particular content with the universal content. The relation reveals the form of the event. Thus a particular is not an event, nor is a universal; an event requires both the particular and the universal together with the relation which shows that just this particular is an example of just this universal and just this universal is exemplified in just this particular. The relation between particular and universal is not an additional particular, nor is it an additional universal. Existence and subsistence may be looked upon as abstractions from reality. This has been commonly held with regard to subsistence, but not so generally recognized with regard to existence. Though both worlds are abstractions, they are abstractions of different kinds. One can not say that they are generically different, for existence and subsistence are not universals and therefore can not be genera. Both existence and subsistence are systems of possibility with reference to reality. These three types of entity, particulars, universals, and events, seem to exhaust the possible sources of knowledge. Anything which we may know is a particular or a complex of particulars (which is also a particular), or a universal or a complex of universals (which is also a universal), or a complex of particulars and universals (which is an event).

By the knowing is meant a process of becoming aware of or attending to this known in one or more of its realms. We are aware of particulars, universals, and events because they are there to be discovered, and because the act of discovery is, in general, one of free choice on the part of the organism. Since particulars, universals versals, and events are different kinds of entities, we may suppose that the that the respective acts by which we are aware of them are different kinds. ent kinds of awareness. Thus in intuition, which I define as the awareness of particulars, we become acquainted with the content of particulars, we become acquainted with the form of particulars, i.e., their individuality, and with the form of particulars; ticulars, i.e., their individuality, and with the form of crist he fact that they are particulars and thus exhibit the form of existence. And in thought, which I define as the awareness of priness of universals, we become aware of the content of universals, i.e., their indicates i.e., their individuality, and with the form of universals, i.e., the fact that they are universals and thus exhibit the form of the for sistence. But although in intuition we are aware of the form of the particular, i.e., that it may be an instance of a universal, we are long as one does not consider it as implying necessarily the concept of change, given concept of change, that which is concretely or the concept of consider it as implying necessarily the concept of concept of organism, and limits it simply to that which is concretely (W. h. the term many and limits it simply to that which is concretely given, the term may be retained. In many respects the term "occurrent" (W. E. Johnson, Logic, vol. 1, p. 199) is to be preferred.

not aware of the universal and thus can not be aware of the fact that this particular is an example of this universal. In the same way, although in thought we are aware of the form of the universal i.e., that it may be exemplified in particulars, we are not aware of any such particulars and thus can not be aware of the fact that this universal is exemplified in these particulars. Since events are neither particulars nor universals they require a unique sort of awareness. We are certainly aware at times of the fact that just this particular exemplifies just this universal. This awareness will be of a complex sort involving both intuition and thought and in addition a unique type of awareness which acquaints us with the relation of particular to universal. This complex awareness may be called perception provided one uses the term to include "internal" as well as "external" perception, i.e., awareness of mental content as well as of physical objects. It is the commonest form of awareness and usually forms the starting point for epistemological investigation. I have tried to show how it may be understood through the abstract approach in terms of two more fundamental types of awareness.

By knowledge is meant the awareness of any or all of these contents. To the degree of distinctness in the awareness corresponds the degree of clarity of the knowledge. To the kinds of awareness correspond kinds of knowledge. Intuition and thought, as well as perception, result in knowledge. Though intuition with out thought is blind and thought without intuition is empty, there are obviously instances of blind intuitions and empty thoughts, and in neither case are they totally void of content. municable experience of the mystic is a case of the former, and the immersion of the abstract logician in a hypothetico-deductive system is a case of the latter. The mystic may not be able to conceptualize his experience, and the logician may not be able to point to any instances of his system, but it is hardly fair to condemn either because it fails to satisfy the criterion of the other. are informative and to this extent may be characterized as knowledge

The essential advantage of this formulation of the problem lies in the fact that it offers a matrix for the expression of the subsidiary epistemological problems. Two such problems may be considered for illustrative purposes

real point de départ of the representative theory and determined its essential nature, viz., knowledge of remembered events whose accuracy is determined by comparison of the memory image with the actual object, can be shown to be a special case under our general formulation of the problem. It is a particular type or instance.

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of our awareness of events. There is nothing in the awareness of of our awareness of our awareness of an event, nor in the event itself apart from its relations, which an event, not the distinguish a "physical" event from a "psychical" enables us the distinction between them, if there is such a distinction between them or in the distinction between the distinctio tion, is metaphysical rather than epistemological. According to our analysis of the cognitive situation, when we are testing the correctness of a memory image we do not compare an "idea" which is "inside" with an "object" which is "outside," but an event (a particular-universal complex) which is real in one sense, with another event (a particular-universal complex) which is real in a different sense. Thus there is no more difficulty involved than in the comparison of two "physical" events; it is simply a matter of searching for a universal which is common to the events. such a universal can be found, the events are similar and our image is an adequate image. Though this conception gives to all images the status of reality, it is clearly justified to the extent to which an image is real as an image.

In the second place, with the problem thus defined, it seems possible to differentiate clearly the respective points of view of empiricism, rationalism, and intuitionism. We may symbolize the knowledge matrix roughly as follows:

$$K = P + E + U$$

where K represents knowledge, P represents awareness of particulars, E, awareness of events, and U, awareness of universals. other signs have the meaning usually given to them in the logical calculus. In the more complete expression of this matrix, the value E would be replaced by its equivalent, R(PU), where this symbol represents the awareness of the relation of particular and univer-But this substitution is not necessary for the purposes of the present discussion. Both empiricism and rationalism may presumably be considered as giving the value zero to P. In addition both these both theories will insist that E and U are not independent variables. ables. For rationalism U is independent and E is a function of U. For empiricism E is independent and U is a function of E. It is thus have thus necessary for rationalism to show that this experience which is assumed. is assumed to be an awareness of events, is but a disguised form of the awareness of universals. This reduces to the metaphysical problem of showing that an event is but a universal or a complex comp or a complex of universals (the problem of the concrete universal). On the other hand it is necessary for empiricism to show that this experience which is assumed to be an awareness of universals, is discovered to be an awareness of universals. This reduces but a disguised form of the awareness of events. This reduces to the metaphysical problem of showing that a universal is but an event or or showing that a universal as the event metaphysical problem of showing that a universal as the complex of events (historically considered as the

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problem of the nature of abstract ideas). Intuition, in one of its many forms, is, mainly, an insistence on the fact that P has a value other than zero. No attitude is taken toward the relative independence of E and U. The emphasis is upon the importance of P on the one hand as compared with E and U on the other, Thus in significant knowledge P is large, whereas E and U are small, if not zero. Hence the main problem of intuitionism lies in showing the nature of the awareness of particulars and why this knowledge is of superior grade as compared with knowledge which involves an awareness of universals.

#### TTT

From the foregoing discussion it is possible to determine the precise sense in which thought may be said to refer to or to be about reality. Since our awareness of reality is of a complex sort. containing as elements both intuition and thought, it is clear that neither intuition nor thought can by itself grasp reality. For each will lack just that element contributed by the other, and both will lack that element which is contributed by perception, i.e., the aware ness of the relation between the particular and the universal. Here we are concerned only with the special problem of the degree, if any, to which thought may grasp reality. This reduces to the more special problem of the degree to which thought may grasp existence. If thought may grasp existence then both intuition and perception are unnecessary as elements of the awareness of reality; on the other hand, if thought is only "about" existence in some indirect manner, then both intuition and perception are necessary in order to permit us to grasp reality.

The degree to which thought may grasp existence is determined

by the following three propositions:

(1) Through thinking about universals we are aware of their form and thus of their reference to particulars. We can not properly think of the form of universals as an additional universal content, for there is no such universal as "universality." The form of a universal is its denotation. The denotation of a universal means not the particulars which are referred to, for there may not he any such but the particulars which are referred to, for there may not he are referred to the particulars. be any such, but the fact of the reference to such particulars. Every universal is denotative in this sense, though to say so is to utter a strict tautology. The distinction between concrete and abstract terms is not a distinction in universals, but in the symbolic representation of universals, and the symbolic representation of universals, and the symbolic representation of universals. representation of universals. The concrete symbol calls attention to the reference of the universal, and the abstract symbol to the content of the universal. tent of the universal. But in both cases it is the same universal with the same form which we with the same form which is thus diversely symbolized. are able to grasp universals as forms accounts for the applicability

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of thought to existence, but does not in any way determine existence. of thought to must be presented before the application of thought to it may be properly considered.

(2) Through thinking about universals we are aware of their content and thus of the diversity of subsistence. By the diversity of subsistence is meant the distinguishability of universals. No two universals are identical as to content, though diverse symbols may be employed to represent the same universal. The grasping of the content or connotation of a universal involves not only the awareness of the nature of the specific content, but also an awareness of the diversity between this content and the content of another universal. As Lewis has pointed out 3 the nature of a concept is its internal relationships with other concepts. In the case of definable universals this awareness of content involves an additional awareness of the content as analyzed into lesser contents; in the case of indefinable universals there is no such awareness, hence the content is sui generis. But even indefinable universals are distinguishable, for indefinability does not mean absence of content.

(3) Through perceiving the nature of events we are aware of a determinateness and an indeterminateness in the relation of particular to universal and its converse. (a) The determinateness is expressed in the following principle: Given a universal content and a particular content, whether they may be related as exemplified to example is determined by the nature of each content. (b) The indeterminateness is expressed in the following principle: Diversity in the content of universals implies diversity in the content of particulars, but diversity in the content of particulars does not imply diversity in the content of universals. Let us consider each of these.

(a) This guarantees a general structural correspondence between subsistence and existence, for if universals are what they are discovered to be and if particulars are what they are discovered to be, and if the universals are exemplified by the particulars, then just these particulars and no others may serve as examples. universal possesses a unique reference to particulars, namely, just this universal is exemplified in just these particulars and just these particulars exemplified in just these particulars exemplify just this universal. Hence if we think this universal universal and if there are such particulars, then we are referring to them in the the most sigto them in a determinate manner. This seems to be the most significant seems. nificant sense in which thought is about existence.

(b) This principle contains two parts: the former is the assertion that diversity in connotation implies diversity in denotation; Mind and the World Order, pp. 82-83.

This principle contains two apparent exceptions only one of which is Remaine. The genuine exception is the case where the universals are related The genuine exception is the case where the universals are genus, e.g., blue and color. Such diversity in connotation does not the latter is a denial of Leibniz's identity of indiscernibles and Me. Taggart's dissimilarity of the diverse. The two parts are obviously inter-connected. The former permits us to conclude that if every universal is exemplified, then the complexity of existence is at least as great as that of subsistence, since no particular could exemplify more than one universal; the latter suggests that the complexity of existence is probably greater than that of subsistence since many par. ticulars may exemplify one universal. There is thus a plurality of existence which is demanded by the diversity of thought, and a plurality of existence which is incapable of being determined by thought since there are unthinkable differences between particulars. The determinate plurality is qualitative; the indeterminate plurality is quantitative. We can be sure that the world contains as many kinds of things as are thought about in our philosophy, but we can not be sure how many of each kind there are. For the instances of each kind may be distinguishable only as diverse instances of a given universal, not as respective instances of diverse universals. Leibniz's principle is true only if one includes the possibility of intuitive discernibility, i.e., discernibility in particulars without regard to universals. Reduction to spatial or temporal diversity is of m avail, for space and time are not principles of individuation in the sense that through universals we can determine the "here" in space or the "now" in time. For no distinction in universals will ever express the difference between "here" and "there" in space and "now" and "then" in time. "Now" and "then" are particular examples of time, just as "this blue" and "that blue" are particular examples of blue. The difference between "now" and "then" is presentational, and not thinkable. Thus existence reveals a diversity which can not be anticipated by thought. This is one of the most significant senses in which thought can not determine exist.

It remains only to summarize the results of this section. can never grasp existence directly, for existence must be presented in intuition. Thought is "about" existence because it grasps will be recorded the state of the s versals. Universals are potentially applicable to an existential system and when the tem, and when thus applicable they are applicable in a determinate manner though they are incapable of exhausting the complexity of the existential system. A. CORNELIUS BENJAMIN.

UNIVERSITY OF ILLINOIS.

imply diversity in denotation. The other supposed exception is based upon incomplete analysis. For overall tri incomplete analysis. For example, equiangular triangles and equilateral triangles seem to have the same angles seem to have the same denotation. Actually, of course, they do not For the particular described as (141). For the particular described as "this equality of angles" is not identical of the particular described as "this equality of angles" is not identical of the particular described as "this equality of angles" is not identical of the particular described as "this equality of angles" is not identical of the particular described as "this equality of angles" is not identical of the particular described as "this equality of angles" is not identical of the particular described as "this equality of angles" is not identical of this equality of the particular described as "this equality of angles" is not identical of the particular described as "this equality of angles" is not identical of the particular described as "this equality of angles" is not identical of the particular described as "this equality of angles" is not identical of the particular described as "this equality of angles" is not identical of the particular described as "this equality of angles" is not identical of the particular described as "this equality of angles" is not identical of the particular described as "this equality of angles" is not identical of the particular described as "this equality of angles" is not identical of the particular described as "this equality of the particular described as "this equality" is not identical thin equality of the particular described as "this equality of the particular described as the particular described as "this equality of sides."

5 Nature of Existence, Vol. I, p. 101.

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#### BOOK REVIEWS

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The Philosophic Way of Life. T. V. SMITH. Chicago: The University of Chicago Press. 1929. Pp. xiii + 234.

This book, based on a series of lectures, is addressed primarily to the growing number of cultivated people who want to know what philosophy is all about. It is at once lucid, witty, and stimulating. With "genial and gentle irony" Professor Smith seeks to persuade his readers to think for themselves, to discard second-hand and ready-made ideas and to develop each his own philosophic way of life. As philosophic guides Professor Smith selects four men whose views may fairly be taken as typical of four of the five major attitudes towards life: the religious, the scientific, the social, and the esthetic. While these are also philosophic ways of life, there remains the philosophic way of life, the way that must finally be trodden without a guide, but whose first stage is understanding of these other ways of life and sympathy with the needs they serve.

Now men are the kind of animals that have ideas, and ideas may be used in radically different ways to alleviate and give security to human life. The oldest and easiest way, the "readiest response of impotence to imposing power," is the way of religion. Ideas being personified as powers, men depend on a "short-cut" for success in life, resigning themselves to life's evils in the hope of other-worldly felicity. One such short-cut is found by Josiah Royce in his faith in the supremacy of Good.

The esthetic way of life consists in taking ideas for their own sake, thus sterilizing them of their potency for good, for "they do not serve science who only stand and stare"! Of George Santayana, however, Professor Smith writes with the greatest admiration; for this "exotic character," while extolling the spiritual life of a disciplined imagination, never forgets the use of ideas in "the inexorable realm of matter."

Ideas reveal their full significance only when it is realized that as results of past events and indications of future events, they may be used as instruments. The scientific way of life is "the long way of discovering concrete means and adapting them to human ends," william James takes the method of science and applies it to the mindedness by his defense of the right to "overbeliefs." Professor scepticism blinds him to the social advantages of scepticism. For social way of life, which sees in the fullest social coöperation the good. "Without emphasizing science less" John Dewey

"emphasizes its social setting more," and "fain would set all in. telligence to work for human good."

Humanism, according to Professor Smith, does not succeed in guaranteeing man a home amidst the "uncertainties of cosmic weather." In death, indeed, the worst is certain, unless religion can triumph over natural frustration. But Professor Smith is unwilling to be lulled by illusion and is insistent that "there is no substitute for doing the job while there is a job to be done." Beyond "the farthest frontier of control" our recourse may be an interest in the game whether we like it or not. After all, "man masters fate by dying nobly." Professor Smith does not raise the question whether, having accepted such heroic counsel for ourselves, we have the right to accept it for others yet unborn. Unless the people of the future differ fundamentally from ourselves natural selection would seem to favor some religious way of life! Professor Smith says that "when men cease to believe in a short-cut, religion is no more." Is this altogether true? Must faith always prove "a social curse"! A religion providing mystical reinforcement to humanism does not seem wholly inconceivable. UNA BERNARD SAIT.

SCRIPPS COLLEGE.

#### JOURNALS AND NEW BOOKS

RIVISTA DI FILOSOFIA. Anno XXI. No. 2. Principî di una teorie dell'educazione come redenzione totale dell'uomo: M. Mareson. Validità obiettiva del Bello: G. E. Bariè. Il nominalismo di G. Berkeley: R. Barisi.

Johnsen, Arrien: Über den Untershied von Mineralien und Lebesesen. Berlin: Gebrüder Borntraeger. 1930.

41 pp. 4.50 M. Mellone, F. H.: The Dawn of Modern Thought. Descartes, Spinoza, Leibniz. With an Introductory Note by W. D. Ross. ford University Press. London: Humphrey Milford. 1930. 124

Pillsbury, W. B.: The Essentials of Psychology. Third Edition, revised. New York: Macmillan Co. 1930. ix + 466 pp.

Spencer, W. Wylie: Our Knowledge of Other Minds. A Study in Mental Nature, Existence, and Intercourse: New Haven: Yale University Press. 1930. 145 pp. \$2.00.

#### 0 NOTES AND NEWS

Albert E. Avey will return to Ohio State University as Professor of Philosophy beginning with the academic year 1930-31.

Philip Stanley, instructor in Philosophy at Union College, has an promoted to Assistant Philosophy at Union College, has specific the same been promoted to Assistant Professor of Philosophy in the same TE

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Action and Certainty. WILLIAM ERNEST HOCKING. Pragmatism and Current Thought. C. I. Lewis.

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Are Relations Effable? J. LOEWENBERG.

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## THE JOURNAL OF PHILOSOPHY

### MR. HOOK'S IMPRESSION OF PHENOMENOLOGY

In the course of a recent article called "A Personal Impression of Contemporary German Philosophy" (this JOURNAL, Vol. XXVII, No. 6, March 13, 1930, pp. 141-160) Mr. Sidney Hook says:

Writers of the phenomenological school keep their eyes on the object, for that in a sense is what the phenomenological method is defined to be. Consequently they are the strongest analytical group in Germany and closest to the English and American school of neo-realism. But latterly Husserl's school has sbandoned the standpoint of "pure description" and invaded the field of ontology. For many years, its opponents had maintained that its so-called "presuppositionless analysis" was only a deceptive phrase which concealed many presuppositions about the nature of knowledge, logic, and consciousness with which it was operating. And now Heidegger has come forward, as one crowned by the master himself to reveal what these presuppositions are and where they lead. Husserl had originally attracted notice with his Logische Untersuchungen, a keen attack on all psychological interpretations of the idea of validity. himself regarded this work as a preface to larger studies which would contain a new logic. But in his subsequent works, instead of a new logic, he presented a new psychology—or rather a logicized version of pre-Lockean psychology. The fundamental dogmas of this "new logic" are the belief in immediate knowledge, the conviction theory of evidence and the doctrine of hypostatic essences which these entail. These entities, maintains Husserl, are self-conlained and autonomous, but are imbedded in the content of consciousness and recognized by an act of intellectual vision (Wesenschau). [p. 152.]

To begin with, let me point out that Husserl had already attracted notice through the publication of the first volume of his Philosophie der Arithmetik in 1891, nine years before the publication of the first volume of his Logische Untersuchungen. second place, the Logische Untersuchungen are not in the main an attack on psychological interpretations of the idea of validity. The first volume is called a Prolegomena zur reinen Logik, and the first the doctring the contract of the doctring th the doctrine that logic should be based on psychology. But the second volume, published in 1901 and entitled Untersuchungen zur Phänomenologie und Theorie der Erkenntnis, contains six Unter-logical interpretations of the idea of validity." The attack on sychologism is psychologism is entirely prolegomenary, and occupies only about a fifth of the entire book.

"Reeping one's eyes on the object" is a bad definition of the phenomenological method. If it means "testing judgments by ob-

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served facts," it is too wide. If it means "restricting observation to the non-subjective," it is even more clearly false. For Hussel and his followers it is not the mere object, but the subjective act with its intentional correlate as such, which is the fundamental datum. Mere Wesensanalyse of objects is not what Husserl means by phenomenology. Incidentally, the emphasis on act-analysis quite apart from profound metaphysical differences, would distin. guish Husserl from the neo-realists.

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If the recentness of Husserl's Formale und transzendentale Logik justified ignoring it, Mr. Hook would be justified in saying that Husserl's work published subsequently to the Logische Untersuchungen did not contain a new logic. Since the original publication of the Logische Untersuchungen and prior to 1929, there had been published, in addition to a revised edition of the Logische Untersuchungen, three philosophical contributions from Hussen's pen: in 1911 a fifty-page article on "Philosophie als strenge Wissen schaft" in 1913 the first book of the Ideen zu einer reinen Phänom! nologie und phänomenologischen Philosophie-this first book of the Ideen bears the subtitle, Allgemeine Einführung in die reim Phänomenologie''—and in 1928 his Vorlesungen zur Phänomenologie des inneren Zeitbewusstseins. The titles alone should show that M. Hook is wrong in intimating that any of these works pretends to offer a "new logic."

What is meant by saying Husserl presented a "logicized version of pre-Lockean psychology"? Were there not many different psy chologies before Locke? Of which did Husserl present a "logicized" version? In explanation Mr. Hook states, as fundamental dogmas of this logicized psychology, "belief in immediate knowledge, the conviction theory of evidence and the doctrine of hypostatic & sences." Of these three alleged dogmas, only the first is accepted by Hugger by Husserl; the second and third are expressly rejected in his published lished writings.

Moreover, as Mr. Hook doubtless knows, the doctrine of interesting the knowledge in the land of the la diate knowledge is expressly asserted in Locke's Essay (Bk. II) ch. I, sec. 4, and especially Bk. IV, ch. II, sec. 1), and has had many non-phenomenologist adherents since Locke's day. does it earn for Husserl's doctrines the epithet, "pre-Lockean"!

Husserl is quite the since Locke's day.

Husserl is quite explicit in asserting that conviction is no interpretation of truth (cf. 17) cation of truth (cf. Ideen, Bk, I, sec. 136, p. 284). phenomenological method is designed to lessen the danger of the critically accepting as critically accepting as truths what are merely blind convictions. Immediate self-givenness of the object is for Husserl the source of all evidence (cf. on cit all evidence (cf. op. cit., secs. 142 et seq., pp. 296 ff.). tion brings, not mere conviction, but rational insight.

It is true that, according to Husserl, essences are recognized

an act of intellectual vision (Wesenschau), though, of course, Husan act of interest we have such a vision every time we mean an oservation serl does not we mean an we have a vision of a horse every time we we seence—any more than we have a vision of a horse every time we r Husserl mean a horse. Wesenserschauung is the act in which an essence is ective act given "in person" (cf. op. cit., secs., 3 and 4, pp. 10 ff.). An act damental erl means which "intends" an essence is necessarily founded upon another act, t-analysis wherein a particular exemplification of the aforesaid essense is inld distin. tended (cf. loc. cit.). To say that Husserl maintains that essences are "imbedded in the content of consciousness" is, to say the least, endentale misleading. We think most properly of the "content" of consciousin saying ness as being the immanent constituents of consciousness, the acts of he Unter. seeing, hoping, remembering, etc., as contrasted with the generally l publica. transcendent objects, which are seen, hoped, remembered, etc. If there had "imbedded" is here equivalent to "exemplified," then essences are Logische not, according to Husserl, "imbedded" only in the immanent con-Husserl's tent of consciousness; they are exemplified in every particular, in e Wissenthe outer world as well as in our minds (cf. op. cit., sec. 2, pp. 8 f.). Phänome-If, on the other hand, we take the phrase more literally, "imbedded ok of the in" may mean "being present as particular parts of." But it were die reine absurd to suppose that a universal essence could be a particular part nenologie of anything. The only plausible meaning which Mr. Hook's phrase that Mr. can have, if what he says is true, is that, according to Husserl, paretends to ticular objects of consciousness are exemplifications of essences. But d version

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what an infelicitous way of saying the obvious! If the denial that an essence is reducible to its particular exemplifications, to parts of its exemplifications, to the class of its real or possible exemplifications, or the like, implied the doctrine of hypostatic essences, then Husserl's views would imply it. But he does not believe that essences are real or substantial (cf. Logische Untersuchungen, Bk. II, pt. I, IIte Untersuchung, passim.; also Ideen, I, sec. 22)—and that is what the doctrine of hypostatic essences properly means.

Husserl's ideal is a philosophy based on clear intuitions of es-Sences, a philosophy which never goes beyond what is clearly given, but remain but remains purely descriptive of that given. Neither he nor his closer followers feel it necessary to renounce that ideal in order to henomenological ideal and the phenomenological ideal and the phenomenological method can and do govern their treatment of ontological problems. fuence—and in that sense are of his "school"—add speculation to phenomenological description, but to abandon the standpoint of pure description is to abandon the standpoint of the If only to keep our concepts clear, we ought not to call such speculative philosophers phenomenologists.

Mr. Hook's characterization of Heidegger as one crowned by

the master himself to reveal what the presuppositions of phenome nology are and where they lead, is inexcusable, even as a bit of ironic rhetoric. True, Husserl has long recognized Heidegger's extraordinary capability and achievement, but the "master" is far from accepting or sponsoring all the pupil's views. In particular, Husserl would not take it, from Heidegger or anyone else, that phenomenology rests ultimately on any presuppositions whatsoever.

There remains a word to be said about the identification of phenomenology with psychology, a confusion indicated by Mr. Hook's epithet, "logicized psychology." Psychology deals with the actual nature of existent minds, the minds belonging to organisms in the physical world. Phenomenology deals with the necessary natures of acts, quite apart from the reality or unreality of their exemplifications (cf. op. cit., Einleitung, pp. 2 f.). There are in deed important similarities between the two disciplines, but their differences are of at least equal significance.

Mr. Hook warns us at the beginning of his article that his "Personal Impression of Contemporary German Philosophy" is "a true picture of the student impressed, his interests, prejudices, and mind set, than of the cause of his impressions, German philosophy." Even so, it is interesting to note that his impression of Husserl's phenomenology seems largely erroneous.

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#### THE PROGRESS OF GERMAN PHILOSOPHY IN THE LAST HUNDRED YEARS <sup>1</sup>

A TURNING point in the development of German culture may be dated just a hundred years ago. In 1831 Hegel died; in 1832 Goethe died. Three years later, in 1835, the first railroad be gan to operate in Germany, running between Fürth and Nürember, a distance of only twelve miles. But by 1850 there were alread twelve thousand miles of railroad operating in the various states and since that time new operations upon the material world, of our sort and another, have assumed an ever more potent and pervasive rôle in German life. How has German philosophy been implied in these new actualities? Is Spengler giving a fair picture, or is speaking with a Fascist bias for overt deeds, when, on the one had actual, "and on the other, of those philosophers "whose wretched."

The present article, though much abbreviating a fuller account which author is preparing of the same subject, seemed appropriate for publicable here in connection with other articles on contemporary German philosophic printed recently in this Journal.

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life's work it is to formulate once again and with minor variations their views on the concept of will and psycho-physical relations, or their views on the concept of apperception after the example of a hundred predecessors?" Is this the story of German philosophy since Hegel? Of course, it is part of the story, but I shall try to show that there has been a relation between the movement of thought and of things, after all.

To begin with, a group of philosophies appeared about the middle of the last century whose common tendency it was to acclimatize human beings to the new material order in which they were finding themselves; these philosophies can be regarded as so many articulate points in a widely diffused strain of modern thought and sentiment which might be called materialistic idealism. The phrase may seem paradoxical, but it applies in one way or another, I think, to the viewpoint of the Marxians, the Monists, to Fechner's panpsychism, to a prominent aspect of Lotze's philosophy, and to many others. Marxianism is the most unmistakable illustration. It actualizes materialistic idealism in a plain and thorough-going form with decisive implications for practice. The primary traits of Marxianism in the large are its orientation toward the material processes of nature and society as basically important, the conviction of a salvation, especially for toiling mankind, to be wrought out through the reorganization of these material processes, and as turning-points of method revolutionary class-consciousness and collectivism. Now while the Marxians emphasized material conditions with an eye to practical salvation, others among their contemporaries were befriending the material world as a source of esthetic and intellectual satisfaction. The pan-psychism of Fechner, whatever else it may be, is a doctrine carried along in a gushing torrent of natureimagery and enthusiasm that coursed into a great variety of channels and carried its refreshing tide to many minds. This potency of Feedmer's writing remains effective and widely appealing even now when certain psycho-physical theorems which he sought to demonstrate hand the sought the sought to demonstrate hand the sought to demonstrate hand the sought to demonstrate hand the sought th strate by painstaking measurements have been largely dismissed. Quite different in mental fibre was Hermann Lotze, and the first principles of his philosophy are strictly "idealistic." Yet it would not be wrong to say that the central effort of his thought was to reconcile the fuller recognition of physical facts and the enjoyment of physical pleasures to idealistic principles in metaphysics and in morals. The morals. The long heritage of a contrast between material and ideal realms has been between material and ideal realms has basically influenced the philosophies of both Lotze and rechner, and it. Pechner, and it is one of their major motives to militate against the view that the view that the material order is something alien or degraded. The motive of the material order is something alien or degraded. same motive played an even more emphatic rôle in the thinking of the

"Monists," i.e., of Ernst Haeckel and his associates. "Monism," which Paul Carus represented in America as "the religion of science," inspired intellectual and esthetic interest in the wonders of nature, and found its practical expression in anti-clerical and scientific education propaganda. For the socialists, the Monists' popularizations of natural science (and of evolutionary biology in particular) supplemented the historical and sociological materialism of Marx with an appropriate cosmological picture.

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One might follow this theme of materialistic idealism into a great many further ramifications; one might, for instance, trace the theme into the precincts of orthodox theology, for it is by no means only the left-wing radicals who are involved. I. H. Fichte, for example, illustrates the point in his reaction from the Hegelian relational view of spirit toward a more substantial emphasis. Indeed more than one theolog in the materialistic 'fifties and after moves in a direction that leads eventually to spiritual bodies that can be photographed. And in the political sphere materialistic idealism is certainly not confined to the revolutionaries-witness the outstanding counter-instance of Bismarckian Realpolitik. mist, Thorstein Veblen, in his book on Imperial Germany and the Industrial Revolution (1915), presented an account of Germany be fore the war in which he emphasized the unusually efficacious liaison there achieved between an advanced industrial technique, on the one hand, and surviving quasi-feudal forms of social integration under autocratic-bureaucratic control, on the other. In the light of subsequent developments one wonders whether a more permanently significant liaison in the constitution of modern Germany may not be that nexus in the collective mentality which so frequently brings to gether "idealism" in the sense of an entertaining of vast projects, a giving of great weight to idea-forces, and "materialism" in the sense of being impressed by manifestations of physical power, massive materials, and the like.

But what of the quality of this materialistic idealism? Grant-that in Marxianism and the other currents noted, thought is engaged in a bold and sweeping way with the material world, how does it come off? With the raising of this critical question, interest was shifted from the question of gaining recognition for a new set of material circumstances to questions of procedure and of standards. Now in the realm of procedure the showing made by the positive sciences was conspicuously brilliant. And hence a common ground, underlying like terra firma, all the speculations on method which came to the fore in German philosophy during the 'sixties and 'seventies was the example of these sciences. Amid all the strife of systems—political, economic, religious, and metaphysical—which

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positive ground, which ies and

es and trife of which had characterized the decades since the death of Hegel, there had been an astonishing advance of knowledge in many fields intensively cultivated by the specialized labors of Fachmänner der Wissenschaft. Was there not a clue for philosophy here? Instead of debating unverifiable and perhaps misconceived premises about an hypothetically absolute matter or mind, would not the love of wisdom be better favored by trying to understand the actual progress in the sciences? By reviewing the results, methods, and limitations of accomplishment in various fields, philosophy might exercise a critical function of genuine import, interpreting in an age of science the meaning of scientific enlightenment.

This shift of interest to method is well marked by the appearance of F. A. Lange's critical History of Materialism (1866) with its concluding theory of "methodological" as opposed to substantial materialism. And it is still more completely illustrated in the line of thought developed by Mach, Avenarius, and their collaborators in the Vierteljahrsschrift für wissenschaftliche Philosophie. of view advanced by Mach and Avenarius is generally called empirio-criticism, but it has also been referred to as "methodological monism." Like the other "Monists" referred to above, Haeckel and his followers, Mach and Avenarius, had a complaint against psycho-physical dualism. But in their view, it was not the dualism between two entities, body and mind, or two stuffs, mental and physical, that needed to be overcome, by conceiving a universal substance having the properties of both. The problem, as Mach and Avenarius conceived it, was one of communication between two fields of experience; the difficulty to be overcome was that of theories which condemned physical and psychological knowledge to nutual isolation. The remedies applied were simple, if drastic. Experience is a continuum—Mach unfortunately said of "sensations"; in this case Avenarius's term Vorgefundenes might have led to less trouble. Science does not seek to get outside this continuum of experience. of experience, nor does it claim to render intelligible why it is the kind of continuum it is, having the various kinds of regions which It has. But science aids us in expanding the continuum and helps of economy M. in it more economically. In developing this notion of economy Mach and Avenarius also introduced conceptions of bio-

As stated, the question of whether the resulting picture of experience was intelligible as a whole or not—a question which was chosen course. Their avowed objective was to bring people into them from an attitude toward traditional popular and philosophic

concepts which encumbered the use of this new knowledge. Empirio-criticism was in some respects an informal, soft-collared, profane manner of thinking congenial to the democracy that regarded the academic tradition as something from which to be "emancipated." But there was also a formal, stiff-collared, genteel philosophy of science in Germany, cultivated by men who cherished the academic tradition as something to be continued and further refined. For many of these the interest in method was bound up with a reaction against materialism; they believed that if the metaphysical primacy of ideal-factors could not be established, at least their crucial importance in scientific method could be shown, and that thus the heritage and cause of idealism would be saved.

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Certainly one of the most remarkable and interesting men of this latter persuasion was Hermann Cohen, the founder of the Marburg School. High-priest of academicians, and a most fastidious intellectualist, he looked back with a truly jealous pride upon a patrimony extending from the Hebrew prophets through Socrates and Plato, Newton and Kant. In these seemingly disparate antecedents he believed himself able to trace a continuous principle of reason, and so to grasp die historische Continuität der Kraft der Vernunft. Hermann Cohen's theory of knowledge is usually called neo Kantian, but one might, in a larger sense, also call it Jehovistic For according to him, man can not look into the source of light and knowledge (as Kant tried to do), but when the light appears through some prophet, he knows it and can use it to see by. Cohen himself is in the position of a higher Talmudist reviewing the law and the prophets, piecing together their messages and making new applies tions. He calls this position "critical or historical idealism" contrast to the older "idealism of self-consciousness" which under took to describe transcendental mind. The sequence of reason in history, which Cohen traces, is in its main steps as follows. Hebrer prophecy stressed the demand for right as something incomparable (einzig) in man. Socrates and Plato emphasized the connection by tween right and idea, the principle of reason. Newton and other modern methods. modern mathematicians, in the calculus, worked out a flexible principle of differents in ciple of differentiation and integration. Kant suggested a shift in the general orientation of thought from a receptive conformity objects to an active of thought from a receptive conformity of the second or thought from the second or thought from the second or thought from the second or the second or the second or the second or thought from the second or the se objects to an active objectifying of rational principles. These, at cording to Cohen, are the control of thought from a receptive control of the control of thought from a receptive control of the control of thought from the control of th cording to Cohen, are the essential clues for philosophy, its most in nediate tasks being the essential clues for philosophy, its most include tasks being the essential clues for philosophy. in nediate tasks being to purge the Kantian principle of active reason from all administrations of the control of active reason from all administrations of the control of reason from all admixture with ontological and empirical idelation and secondly, to generalize the logic of differentiation and integration achieved in mathematical the logic of differentiation and diffe tion achieved in mathematics. There ran in Cohen's mind the not tion of a thought present tion of a thought present tion achieved in mathematics. tion of a thought-process, on the one hand continually different

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ating and specifying, and on the other continually integrating more thoroughly the field of right. In jurisprudence he thought this process was concretely at work, but its nature could only be clarified by generalizing from the juridical concepts the ethical ideas and principles which he believed to be implied. Jurisprudence, he used to say, is the mathematics of the social sciences, but the ethics which is their logic must be disclosed. A socialist and a cosmopolitan, but also something of a Judaist and a Germanophile, Hermann Cohen believed it possible to discipline and ethicize these turbulent currents by the force of ideas. Der Wille wird rein durch die Erkenntnis, he used to say, and again Die Idee ist das Sollen, a statement in which his uncompromising intellectualism unites the force of reason and the force of obligation much more completely even than did Kant.

Philosophy, according to Cohen, aims at a unified sense of culture (Einheit des Kulturbewusstseins). But his numerous and eminent disciples have not primarily sought to elaborate the historical synthesis suggested in the above sketch of his thought. This extraordinary composite of Hebraism, Platonism, Kantianism, mathematics, legalism, and socialism, which the founder had as a personal possession, operated powerfully to attract men interested in these various domains into the school. But most of the significant work done by the disciples was in one or another of these fields, and there resulted a great series of philosophische Arbeiten purporting to analyze out the principles of reason operating in these various domains to produce valid results. The work of this kind, done by Natorp in the fields of ethics and pedagogy particularly, by Stammler in the realm of law, and by Cassirer on the logic of the natural sciences—to mention only the most outstanding names—was of such distinction and weight as to give the Marburg School's viewpoint something like a preponderant influence in German philosophy from perhaps the 1880's to 1910.

But from the beginning there was also much dissent. Some of it was from "realists" (e.g., Alois Riehl) who were not persuaded to give up the "ding-an-sich." More of it was from those who critiatention to die Idee to the neglect of other forms of experience. And finally, disagreements arose regarding the content and nature Germany taught that the first principle implicit in scientific method more, that there are two methodologically different kinds of science, as look for laws, while the idiographic approach a knowledge of

individuals and events in all their concreteness. For Windelband and his school interest centers in the idiographic method, particularly hope and his school interest centers in the idiographic method, particularly hope and his school interest centers in the idiographic method, particularly hope and his school interest centers in the idiographic method, particularly hope and his school interest centers in the idiographic method, particularly hope and his school interest centers in the idiographic method, particularly hope and his school interest centers in the idiographic method, particularly hope and his school interest centers in the idiographic method, particularly hope and his school interest centers in the idiographic method, particularly hope and his school interest centers in the idiographic method, particularly hope and his school interest centers in the idiographic method, particularly hope and his school interest centers in the idiographic method his school in the idiographic method his school interest cent larly as applied to a knowledge of human history, because of their persuasion that certain events are singularly endowed with unique. never to be repeated, combinations of value. This doctrine of the Einmaligkeit der historischen Ereignisse floats generally in a medium of conservative sentiment, patriotic attachment, and literary appreciation tinged with a sense of mystical possession that is the congenial climate of the south-west German school. The Marburg neo-Kantianism offends these sentiments by elevating above all particularity a critical and reforming activity in the name of a uniform principle derived from a rather questionable union of mathematical physics and political ethics. Hermann Cohen's conception of the historic continuity of reason is, from the point of view of the south west German school, something of an outrage against a faithful and generous appreciation of the diverse values which history really enfolds.

The spirit and intent of this criticism against the Marburg school were shared by many who did not accept as a necessary consequence the formulas of Windelband and Rickert. In fact, one of the most penetrating critics of Windelband's theory was Wilhelm Dilthey, who certainly shared the underlying interest in historical understanding, and also the emphasis on appreciation of unique values Dilthey does not favor the distinction between nomothetic and idiographic method as a basis for classifying the positive sciences, since any science might well find a use for both methods. indicates what he regards as a truly fundamental distinction be tween Natur- und Geisteswissenschaften. The cardinal difference is that the Geisteswissenschaften are not only interested in genetic and causal explanation, but also in understanding (Verstehen) the meanings and significances in their subject-matter, while the Naturwissenschaften abstract from this and concentrate upon description and explanation alone. In developing the theme of Verstehen in the Geisteswissenschaften Dilthey comes to the conclusion that clusion that comprehensive value-systems, like Windelband's and Rickert's and translation value-systems, like Windelband's and Rickert's, and transcendental regulative principles, like those of the neo-Kantiana de la regulative principles, like those of the neo-Kantians, do not take us very far in the understanding of man's cultural life. Neither the method of atomistic psychology, building up from elementary sensations or reflexes, nor the method of transcendental philosophics. of transcendental philosophy, defining synthetic a priori principles of all experience arrives at the synthetic apriori principles of life all experience, arrives at the meanings and significances of life itself. The latter are included in the meanings and significances of life. itself. The latter are imbedded, so to speak, in the many circums scribed partial systems. scribed partial systems, the specific Strukturzusammenhänge, which we live. The under specific Strukturzusammenhänge, which we live. The understanding of meanings and significances

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must base itself upon a recognition and consideration of these. This conviction leads Dilthey to reflections on the various types and kinds of systems which occur in culture, reflections which carry him far from the preoccupation of his contemporaries with scientific method as something isolated and autonomous and commanding, to a juster sense of its intercourse with non-cognitive types of experience.<sup>2</sup>

But these ideas suggested in Dilthey's writings would never have attained the significance which they possess in contemporary German thought had they not received pertinence from a wide-spread cultural movement which at the turn of the century affected not only philosophy, but more primarily letters and criticism, poetry, painting, crafts, architecture, city-planning, education—a large sphere, in other words, of arts and crafts, manners and morals. the 'sixties and 'seventies of the past century we remarked a shift in philosophic interest from the question of recognizing the reality of a new material order to questions of procedure and especially of scientific method. (Cf. pp. 398-399 above). Now in the 'nineties there comes a second shift of interest-involving philosophy rather than initiated by it—a shift from questions of scientific mentality to questions of vitality and style of life. Whatever their theories and beliefs about science, people find themselves by the turn of the century living in a novel physical environment with its unprecedented opportunities and wearinesses. The question of the Lebensform was inescapable, and organized intellectualism with its wonderful host of specialized scientists, in whom so much confidence had been placed, did not seem geared to answer this question.

As early as 1872 Nietzsche had launched an attack against organized intellectualism, and more broadly against a culture which achieved distinction only in commerce and science. But throughout most of his life Nietzsche remained a voice crying in the wilderness. His point of departure is antipathy to mediocrity, to what he regards as a plebeian spirit of protectivism, comfortism, and satisfaction with formless well-being. Opposed to this philistinism he inagines a heroic spirit which out of its own bountiful vitality and tesource gives some distinctive and intrinsically admirable form to life. Amid the national jubilation after the victory over France in 1870, Nietzsche announces that German culture has declined to the inferior level of a mere civilization. Historicism, learning without relation to vital motives (Belehrung ohne Belebung), eclectic accumulation of alien art-products, lack of a distinctive indigenous style (Stillering) style (Stillosigkeit), sedentary urban living, hedonism and sentimental pantheism—are all cited as symptoms of this decline. In the Second decade of his writing, that is in the 'eighties, Nietzsche's sense 2 See my article on Wilhelm Dilthey, this Journal, Vol. XXVI, No. 1, of personal estrangement from his contemporaries became more and more complete, and his critical deliverances broadened out into an ever more sweeping judgment upon European traditions. Now nationalism, Christianity, traditional morality, and science were attacked as manifestations of the plebeian spirit, and in contrast the desideratum of an "artist-metaphysics" or artist's-view-of-the world was indicated as alone appropriate to the heroic spirit. Culture (Kultur) was defined as "unity of esthetic style in the manifestations of a people's life," and science, which when critical transcribes everything into an unclosed set of provisional relational formulæ, was itself criticized "through the optics of art."

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It was not necessary to share Nietzsche's estimate of the past in order to find many of his positive emphases decidedly relevant to the In 1901 there was held at Dresden the first Kunst-Erzie hungs Tag, followed by other gatherings of artists and teachers, who were interested in a less bookish and fact-getting type of pedagogy, in one more favorable to esthetically satisfying forms of expression and activity. Eugen Diederichs at Jena led the van in Kunst-Bücherei, a revival of interest, not exactly in fine book-making as a de luxe creation, but rather in the publication of many books, varied, distinctive, and interesting in appearance with well-designed types, decoration, and bindings appropriate in form and color to the individual text. Similar revivals in other crafts took place. A refreshing clarification and integrity appeared in the fields of architecture and city-planning. During the 'nineties also the Wandervögel began to take to the open road, shaking the city-dust from their feet and freeing themselves in dress and recreation from many stuffy, unwholesome conventions of German student life. In the same decade among men of letters there began a reaction against photographic naturalism, one of the most interesting and significant centers of this reaction being the cult of writers which developed around the person and work of the poet, Stefan George, whose lyrical are contained and work of the poet, Stefan George, whose lyrical are contained as a state of the poet, Stefan George, whose lyrical are contained as a state of the poet, Stefan George, whose lyrical are contained as a state of the poet, Stefan George, whose lyrical are contained as a state of the poet, Stefan George, whose lyrical are contained as a state of the poet, Stefan George, whose lyrical are contained as a state of the poet, Stefan George, whose lyrical are contained as a state of the poet, Stefan George, whose lyrical are contained as a state of the poet, Stefan George, whose lyrical are contained as a state of the poet, Stefan George, whose lyrical are contained as a state of the poet, Stefan George, whose lyrical are contained as a state of the poet, Stefan George, whose lyrical are contained as a state of the poet, Stefan George, whose lyrical are contained as a state of the poet, Stefan George, whose lyrical are contained as a state of the poet, Stefan George, whose lyrical are contained as a state of the poet, stefan George, whose lyrical are contained as a state of the poet, stefan George and the poet, stefan George are contained as a state of the poet, stefan George are contained as a state of the poet, stefan George are contained as a state of the poet, stefan George are contained as a state of the poet, stefan George are contained as a state of the poet, stefan George are contained as a state of the poet, stefan George are contained as a state of the poet, stefan George are contained as a state of the poet, stefan George are contained as a state of the poet, stefan George are contained as a state of the poet, stefan George are contained as a state of the poet, stefan George are contained as a state of the poet, stefan George are contained as a state of the poet, stefan George are contained as a state of the poet, stefan George are contained as a state of the poet, stefan George are contained as a state of the poet, and the p are certainly distinguished examples both of magnificent form and of form expressing individual character with moral and spiritual import.

This many-sided movement in arts and crafts, manners and morals, seems more determined by the things and situations of modern culture than by clearly defined ideas. But the ideology of the movement in Germany stresses Belebung and Form or Stil. The idea of Form frequently carries with it a reference to individual character (Charakter or Eigenart) as the foundation of vital form But it is not always given this individualistic turn. Much has been made in recent writing, for instance of Gemeinschaft as contrasted with Gesellschaft. The relations of society, i.e., Gesellschaft, may be

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external, fluid, functional, utilitarian, while community or Gemeinesternal, mund, or Gemeinesternal, mund, or Gemeingehaft implies a vital bond between the members of the group and schaft implies of the group the sense of intrinsic significance in the form of the group. the sense of the group. This aspect of community has been stressed by writers in all sorts of eamps from the clerical to the communistic. If one can not believe camps from on grounds of a metaphysical principle (such as the Marxist dogma, for instance) or even on grounds of a transcendental rule of method (e.g., Hermann Cohen's idea of reason) perhaps one will be persuaded that the group nevertheless presents a significant form or pattern of life. Or putting the matter another way, what one wants to know is not whether a group can deduce its program from a metaphysical or regulative principle of scientific method (not much confidence resides in that), but does it represent a vital form of life? For one is seeking such vital forms in all the realms of a novel existence from physical culture and city planning to social policy at large and realms of personal and ideal integration as well.

Comparing this tendency in German thought with fin-de-siècle reactions against nineteenth-century "science" in other countries, I seem to find somewhat less disheartenment expressed in Germany over the alien world of physical nature—perhaps because of the previous recognition and adjustment to the material order which was indicated above. On the other hand, there is a greater expression of dissatisfaction with science because its provisional, relational thinking affords little support in the quest for satisfactory finality in personal and social integration.

#### II

By the opening of the twentieth century "the fat was in the fire" in Germany over questions of philosophic method. On the one hand were various "critical" philosophies of science, each of which claimed the authority of philosophic first principles for a set of ideas conceived to be the basic logical presuppositions of the positive sciences, or more accurately of some supposedly model science among the positive sciences. On the other hand, there was not only dissatisfaction because of striking disagreements between these "critical", philos because of striking disagreements between these directed philosophies, but a growing protest that all of them directed too much attention to transcendental concepts of dubious value and enough the dip its actual not enough to other conditions of scientific method in its actual operation operation—again, that by accepting the given state of positive science as a basis from which to derive universal principles, they ran the danger of minimum which to derive universal principles, would be at danger of universalizing errors which later scientists would be at pains to correct—and again, that principles and concepts derived one field from one field were extended beyond their appropriate domain with

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consequent misinterpretation of other fields of experience. Finally, these various philosophies of science were altogether oriented around organized intellectualism; the layman's knowing and non-cognitive-experience obtained no recognition except as passed through the filter of some professed Wissenschaft. This last criticism was supported and given force by a wide-spread sense of significant change in the immediate forms of daily living, in manners and Individual philosophers, of morals, and manifold arts and crafts. whom Dilthey was one, had suggested new lines of inquiry, eg, analysis of Strukturzusammenhänge, and many writers spoke rather loosely of Lebensformen, Stileinheiten, etc. But the criticist philos ophers sat at ease with the thought that if such ideas were ever to be clarified and given precise formulation, it would have to be through the "regulative influence" of their first principles. The roots of the prevailing criticist philosophies of science still stood deep in the ground of Erkenntnistheorie, and no super-epistemologist had undertaken the Herculean labor of ploughing them under and preparing the soil for a different crop. It was the work of Ed. mund Husserl, more than of any other man, that accomplished this

It is entirely out of the question here to attempt an account of these prolonged and arduous ploughings of Husserl, and I shall content myself with stating the projects he undertook (as he himself defines them) and with indicating the results relevant to my theme. Husserl's foundational work, the Logische Untersuchungen, first appeared in two volumes in 1900 and 1901. In the first of these volumes Husserl undertook to present the idea of a pure logic (Die Idee der reinen Logik), and in the second he introduced the project of a phenomenological description of cognitive experience as a necessary aid to the fullest possible clarification of such a logic By a phenomenological description he means a sheer, unprejudiced (voraussetzungslos) account of cognitive experiences as they present themselves to us without introducing explanatory hypotheses concerning existence. Toward the close of his explanations and illustrations of the trations of this enterprise Husserl offers some fundamental criticisms of E cisms of Kant that are highly indicative of the trend of his own thought.

Kant, he says, recognized the great significance of categories, but he did not extend the concept of perceiving, the method of unbiased observation to the discovery of them. Instead he became confused in deductions and explanations of a closed system of categories, by being overanxious to "rescue" mathematics, natural science, and metaphysics from uncertainty, before he had submitted the whole sphere of the acts involved in logical thinking to clarifying critical analysis. In this connection it is important to note that Husserl

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speaks of his own phenomenology as clarifying, but not as explainspeaks of the cognitive processes; it is aufklärend rather than erklärend. (Cf. L. U. pp. 674-675.)

I should select three points as the spear-heads of Husserl's

thought in regard to method:

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(1) First, the point just mentioned in the criticism of Kant, that emphasizes the element of a direct intellectual perception in the disemphasizes of ideal forms, and together with this emphasizes the fact that there is no special path or privileged data ready at hand from which we can surely deduce or induce a knowledge of all such forms. As far as we know, there is always room for further discovery.

(2) A second point, is the recognition of two major classes of forms: the categorial and the regional or "material" forms. categorial forms Husserl means those that pertain to objects-as-such. or to any class of objects, and by perceiving these we understand the formal necessities to which all objects submit. Pure logic or the "mathesis universalis" has these forms and their combinations as the subject-matter of its investigations. On the other hand, the regional or "material" forms pertain to particular classes of objects, and through the perception of them we gain insight into necessities that pervade specific regions. An example of this latter type of regional or material necessity may be drawn from the color-scale or spectrum, when we observe, for instance, that the color "orange" lies between red and yellow in a different sense from that in which it could lie between any other two of the colors. we observe a form of this particular region.

(3) The third point is that, while Husserl speaks of cognitive experience as a series of noetic (subject-pole) moments and their noematic (object-pole) correlates, he drops the traditional emphasis on the duality of these two, and directs attention to the kind of nexus in which they are found in any given case. The questions, what is the subject-in-itself and the object-in-itself, and how can they cooperate, and what does the one contribute to the other (to-gether with a subject-in-itself and the object-in-itself, and what does the one contribute to the other (to-gether with a subject-in-itself and the object-in-itself, and what does the one contribute to the other (to-gether with a subject-in-itself) give gether with the many attendant dualities which these entail), give way to such questions as what are the subject-poles and the object-poles are the object-poles and the object-poles and the object-poles are the object-poles poles, and how are they interrelated, let us say, in recognizing Pilsener beer, or in looking for evidence in a murder case, or in solving mathematical equations, etc. The emphasis falls on characterizing what Scheler calls das phenomenologische Band, the observed nexus

Husserl's consistent emphasis on discovery is featured by a characteristic idea of evidence as the fulfillment (Erfüllung) of intended meanings (P.) thing and when the state of the fulfillment (Erjumny) thing and when the state of t thing and what we perceive is either an adequate or a more or less inadequate fulfillment of our meaning. Warheit, says Husserl, in die volle Übereinstimmung zwischen Gemeintem und Gegebenem als solchem. This is a root idea which accompanies Husserl on every excursion he makes into the ways and realms of knowing, whether he is talking about sense-perceiving or the perception of ideal forms.

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I suppose it is scarcely obvious why these reflections of Husserl's were so widely received in Germany as a solvent. Why have men very variously trained (Scheler who was trained by Eucken, Hartman who was brought up philosophically in the Marburg School, Dilthey himself and most of his pupils, men also of the southwest German school, to say nothing of men trained by Husserl's own teacher Brentano, and still others in various Catholic centers like Munich, Prague, and Würzburg), why did they hail phenomenology as most acceptable and significant and favorable to their own work! I see three large reasons in explanation of the appeal of phenomenology.

Perhaps the first thing to emphasize is not the novelty of Huserl's thought, but its essential continuity in many fundamental points with German philosophical tradition, and again its reaching beyond this for renewed contacts with the more general heritage of European scholasticism, rationalism, and empiricism. Phenomenology, historically considered, wears the aspect of a new synthesis of modern European traditions. No doubt much of Husserl's effect is due to the very fact that he continues, or even reverts, one might say, to the time-honored starting-point of modern philosophy-immediate consciousness, and goes his predecessors one better in the considered analysis of its phenomena. On this side of introspective analysis he is a veritable Proust of epistemology. Again in the essential rôle which he assigns to psychic acts and intended meaning he retains much of the familiar Kantian emphasis on the activity of the subject. In fact, it is not difficult to develop Husserl's thought in the direction of a metaphysics which ultimately derives every thing from a transcendental, absolute subject. In recent years Husserl himself has been clearly moving in this direction, much to the disappointment of "realists" who hoped to see his emphasis on the "object-pole" of experience taken as a metaphysical clue. For without question a decided trend throughout Husserl's thought is toward strossing to is toward stressing the objectivity (gegenständlichkeit) of both selfst and intellectual for its and intellectual findings. The really significant fact in this connection is that since the really significant fact in this connection is that since the really significant fact in this connection is that since the really significant fact in this connection is that since the really significant fact in this connection is that since the really significant fact in this connection is that since the really significant fact in this connection is that since the really significant fact in this connection is that since the really significant fact in this connection is that since the really significant fact in this connection is that since the really significant fact in this connection is that since the really significant fact in this connection is the really significant fact in the real significant fact in the r nection is that since the Kantian "copernican revolution" no "critical" epistemologist in G cal epistemologist in Germany, working in terms of the immediate phenomena of consciousness, has done as even-handed justice gs Husserl to both the subject- and object-poles of experience. thing that looms up in the background here is the split between

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Protestant and Catholic Germany in philosophic traditions since Kant, and it is, I think, truthful to say that no philosophical movement in Germany since Kant has attracted people of both parties ment in Germany since Honomenology. However, to account for in a measure equal to phenomenology. However, to account for in a measure equal to phenomenology a thousand and one factors are involved besides the problem of subject and object!)

Indeed, it would be a great mistake to overemphasize all these historical affiliations in speaking of phenomenology, and so give the impression of an essentially retrospective movement. On the contrary, the emphasis should fall decidedly on its orientation and openness toward new materials, new problems, and further diseoveries. It places perhaps more stress on inquiry, description, and objective analysis than any major philosophical movement in Germany has ever done. It does not look askance at the unsure gropings of recent thought for Strukturzusammenhänge, Lebensformen, Gestalten, Formen der Sinngebung, etc., on the ground that all these must eventually bow to transcendental ideas derived from some model science. On the contrary, it associates the progress of science with the accurate perception of many such forms (now but vaguely apprehended or not at all) through which the more specific meanings given in particular regions of experience may be filtered as clearly as certain general characteristics of all experience are perceived in the forms of logic. There is, however, no model science the knowledge of whose regional or material principles can be substituted for regional analysis in some other field without the distortion or neglect of some truth. Nor can the formal principles relevant to all fields play the rôle of the regional or material ones. The "criticist" philosophies of science aimed to derive the root concepts and postulates of the exact sciences, and elevated these to the status of philosophical first principles. The aim of phenomenological philosophical first principles. ophy is to clarify contexts in which meanings are given, perhaps the context Cezanne painting apples, or a priest celebrating Mass, or Einstein stating his equations, or a woman giving birth to a child, or someone looking at the moon either as a satellite of the earth or as Queen of the Night. It appears that the aim of phenomenology can well include the Night. Well include the aim of the criticist philosophies, since postulates of the exact. the exact sciences are an important class of meanings, but the contention of tention of the criticist philosophies that philosophy can confine its attention to the derivation of this special class of meanings, because they are the derivation of this special class of meanings, because they are the roots of all valid meaning, would seem to be erroneous. Phenomenology is a more inclusive philosophy of science than has hitherto prevailed in Germany, and this is the second great reason of its wide continuity with European traditions; see above p. 408.) (The first mentioned was its wide continuity

The third appeal of phenomenology is emotional, or vital, or moving to the spirit, all of these, but in any case non-cognitive. has certain non-cognitive values that the "criticist" philosophies of science lacked. The emphasis on direct perception and the emphasis sis on the bond, the nexus of subject and object, sense and reason etc., instead of on the duality of these, convey a sense of intimacr and of integration which was seriously missed in the criticist philoso On this side, the doctrines of phenomenology link readily, phies. for example, with theories of empathy (Einfühlung), and like these may gratify emotional continuities and quasi-mystic unities. Be sides the stress on the intellectual perception of ideal forms, there runs through much phenomenological literature that pronounced and unmistakable emotional interest in unities of personal and social living (in vital forms of association and living) which we noticed (cf., above pp. 404-405) so wide-spread at the turn of the centur. and so unsatisfied by criticist philosophy.

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Did space permit, these qualities of phenomenological philosophy might be exhibited at work in specific instances. A great number of illustrations from diverse fields could be adduced. In the field of moral philosophy the work of Max Scheler (Der Formalismus in der Ethik und die materiale Wertethik, 1913-1916), and more recently that of Nicolai Hartmann (Ethik, 1926), is outstanding and indicative of a wide-spread tendency. Both Scheler and Hartmann criticize the Kantian formalism in ethics, and renew the problem of analyzing the domain of concrete moral values by a descriptive clarification of specific values together with the attitudes in which the values are present. In psychiatry Jaspers, Schilder, Schneider, Kronfeld, Storch, Meyer-Gross and others, under the influence of phenomenological views, have sought to improve the description of various psychoses considered as "wholes," emphasizing the possibility and value of the psychiatrist's "understanding" (Versit hen) the meanings of various items to the patient in their context, whether or no he has found a causal explanation of the psychosis. In educational and social psychology Spranger, Litt, and other pupils of Dilthey's have undertaken to characterize the varieties of normal attitudes in which things become meaningful to people, e.g. the utilitarian, esthetic, theoretic, mastery attitudes, etc., to mention only some obvious types. "Cultural psychology" (Geisteswis senschaftliche Psychologie), not social psychology, is what this group calls its work the calls its work, the interest being not primarily in social relations, but in kinds of mooning of life but in kinds of meaning (Formen der Sinngebung) and types of life (Lebensformen) (Lebensformen). The practical context of this work is, as stated, educational: it is an effective context of this work is, as stated, and the context of this work is, as stated, and the context of this work is, as stated, and the context of this work is, as stated, and the context of this work is, as stated, and the context of this work is, as stated, and the context of the cont educational; it is an effort to clarify some of the problems involved in that reconstruction of in that reconstruction of the older fact-getting system of education

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(cf., p. 404 above) by a consideration of the meaning of facts in relation to different kinds of attitude. In the historical sciences, too, tion to different kinds on the one hand, and in unique events, on the older interest in laws, on the one hand, and in unique events, on the older, together with linear philosophies of history, has been supplemented by a strong interest in characterizing and understanding plemented by a strong interest in characterizing and understanding significant unities in style of life that have appeared in the course of significant unities in style of life that have appeared in the course of history. In the exegesis of texts, in literary criticism, and in esthetic criticism generally there has been a wide-spread and pronounced shift of emphasis (sometimes taking fantastic forms) from enumeration of circumstances bearing on a document or work of art to description of a context in which its character is revealed. Again, the anthropological concepts of "culture-pattern" and the "configurations" spoken of in Gestaltpsychologie, while somewhat less directly linked with phenomenology in their origin than the other developments just mentioned, are certainly of a congruous nature.

If one were to characterize very generally the trend of German thought in all these recent studies, one might emphasize a tendency toward regional analysis in the interest of discovering wholes or contexts which have meaning for subjects or agents involved in them. In contrast with the older method of regulating specific inquiries by wholesale metaphysical or epistemological principles we have something approaching a methodology of "situational analysis." Only in borrowing this last term from Professor Dewey's vocabulary one is reminded of the differences between instrumental empiricism and phenomenology. While in the former thought moves toward the resolution of a felt difficulty, in the latter it seems that reflection is more habitually directed toward contemplative understanding or insight into the ways in which subjects are involved in various contexts so that meanings are given. Thus the interest in contemplative apprehension of the experiencing subject in its various modes, which fgured so largely in the great speculative systems produced by German phil man philosophical imagination, persists in the more specialized, factual (section) factual (sachlich) explorations of today. Phenomenology, though its romantic impulses have been more and more subjected to scientific disciple.

in connection with the so-called *Überwindung* of neo-Kantianism, there was considerable talk in Germany of a *Wiederaufstehung der Phenomenology* to usher in a return to something like traditional gists with ontological leanings, like Scheler, kept putting off a him before the work was written. Hartmann has written a book in stage work on say that metaphysical questions are valid questions.

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In 1927, however, the first part of a long-awaited work by Martin Heidegger appeared, called Sein und Zeit. I think that it probably beats all records hitherto made in German philosophy for idiosyncrasies of expression. (And that, of course, is quite a technical achievement.) But nevertheless, I believe it is possible to explain in terms of the foregoing exposition what Heidegger is about.

I am not sure one ought to say that he has written a work in metaphysics. What he has done is to generalize to the utmost the problem which occupied other phenomenological investigators in specific fields. They undertook to clarify a great many diverse specific contexts (Strukturzusammenhänge) in which meanings are to be found. Now Heidegger raises the question, is there a universal context, a general Strukturganze which gives a meaning (Sinn) to being (Sein) as such. Heidegger has a positive answer up his sleeve, and not a trivial one either. He unfolds it in a number of steps:

(1) The first step is to say that among the various connotations of "being" (Sein) the connotation of existence (Dasein) is the fundamental one here in question. We are looking for a general context in which existence has meaning, not for the meaning of some other kind of being.

(2) The second step points out the Jemeinigkeit of existence, the "ever my-ness" of existence, and correlative to this the In-der Wellsein of my existence. The world in which I am is not resextense in Descartes' sense, but it is Umhaft, that is, round about me.

(3) The problem now reads: are there any general traits of my being-in-the-world which give it a meaning? And the answer this question is: yes, the traits of Sorge (care, taken somewhat in the sense of Dame Care, not of sorrow). It is this care that in general gives meaning to existence.

This care has as a kind of basis which makes it potential: Befind lichkeit, Furcht, Verstehen, Rede, Gerede, Neugier, Zweideutigkeil das Verfallen und die Geworfenheit

But these are only the makings of care, so to speak; its actuality its form, its structure, in which existence takes on meaning, is:

(a) First of all, to be ein Besorgen, i.e., a being occupied and conference with something

(b) Fundamental to this is time (Zeitlichkeit). The structure of time with its past, present, and above all with its future, which the degree says really creates the past, is fundamental to care, and to the meaning of existence.

(c) Fundamental also is death, ossible of

(c) Fundamental (d) And conscience, which makes us realize our own part in our (d) And compart in our verification and Geworfenheit, and thus becomes der Ruf der Sorge

(the summons of care).

Such is the bare outline of Heidegger's book with much interesting detail, but also much torturing verbiage, omitted. Rumor has it that Heidegger, "disdaining the conversation of his brother philosophers, wanders out into the fields to talk to peasants' and that he has tried to read the meaning of existence together with them. There is unmistakably an effort here to get away from organized intellectualism to das altägliche Dasein from which Germany philosophy has long been removed. But, unfortunately, Heidegger serves up his thought in language only too well suited to the denatured taste of his profession. Perhaps his motive for trying to translate the basic thought of everyday into the professional jargon of philosophers is polemical, because a second volume promises to be "eine Destruktion aller bisherigen Ontologie." (Perhaps that will not be as dangerous as would another Prolegomena to every future Metaphysic!)

Indeed, if the polemic implications of Heidegger's thought are ignored, his concept of care may well seem somewhat naïve or platitudinous at first sight. But considered in relation to the background of German thought it appears as a synthetic concept of rich and novel importance. In the first place, ever since the rise of Marxian materialism (with which we began our account, p. 397 above) there has been a troublesome rift in German thought between two competing philosophies of human conduct. One of these philosophies, the Marxian materialism, derives human action from needs (primarily physical), and judges it according to its success in satisfying these needs. The other philosophy, grounded in the moralistic religious traditions of Europe, but somewhat divorced in its Kantian and post-Kantian form from the usual theological sanctions, evaluates conduct with primary regard for an absolute rule of right or for a set of intrinsically good qualities and actions. Heidegger's concept of care avoids the one-sidedness of both these approaches, and points to a philosophy of motivation and evaluation which records. which regards both physical needs and ideal interests. is just conceivable that another long-standing gulf in German thought between the utilitarian, instrumental, and technical, on the one hand, and the contemplative, expressive, and spiritual, on the other, might be contemplative, expressive, and spiritual, on the other, might be bridged from the point of view of human care.

But whether be bridged from the point of view of Heidegger's But whether or not some of these larger potentialities of Heidegger's thought for the some of these larger potentialities of Heidegger's thought for the reconstruction of German philosophy materialize or not depends upon future developments beyond the present purview.

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#### SUMMARY

The article has discussed the progress of German philosophy largely in terms of its relations to the changing facts of life and science during the last century. It has sketched a progress in the sense of a progression, a series of steps, rather more than in the sense of an improvement along some line. To recapitulate the main steps: Shortly after the death of Hegel a new material order makes its appearance in German life and science, and coincidentally a strain of philosophy which was characterized as materialistic ideal. To obtain recognition for the material order, to militate against its disparagement, to demonstrate its relation to practical and ideal satisfactions, are the major objectives in the philosophies of this strain. By the time of the founding of the Empire in 1870 questions of method have come to the fore. Consciousness of a new order has been established, there is a confident spirit of full-steam ahead in the air, science contrasts favorably in critical acumen and results with the speculative extravagances of philosophy; it is believed to contain the clue to procedure in the new order. A new group of "critical" philosophies appears, each abstracting from the sciences some universal principles of enlightenment and progress. Before the close of the century, however, there is a quasi-romantie reaction against organized intellectualism, a reaction, on the whole, less retrospective than futuristic in its quest for vitality and satisfying style of life in the new order. The present (together with "phenomenological philosophy") is still somewhat in the swing of this new romanticism, but in addition there is a steadier, more critical, and more inquiring interest than has existed for some time in understanding the fundamental constitution of different spheres and dimensions of life. The interest that the new culture shall, if possible, be rich and understanding in its offering for different sides of life prevails. In part this interest is founded on the sense of the European past with its local diversity, stratified society, and cultural control of the society and cu tural contrasts—a deeply moving force that is apt to cause Euro peans to see in the extensive changes of the present little but the spectre of a horrible flattening out of life by the steam-roller of business standardization. At the same time no really thoughtful person supposes that I person supposes that he can simply read from this sense of the past, what requirements what requirements and possibilities of enrichment there are invarious domains of arithment there are invarious domains of arithment there various domains of existence. Here is the need for deeper analysis and Wesensschau.

In conclusion, I may mention a very different account from the one I have given which might be offered of the progress of German philosophy in the last hundred years. It might be written up as a progress in disillusion, the principal steps being from religious faith to metaphysics, to "criticism," to phenomenology, or the belief in

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but perceiving. Such an account would be more in accord nothing Date Post Spengler's interpretation of modern European histan mine with Nietzsche's observations on "E than mine with Nietzsche's observations on "European history and with Nietzsche's observations on "European nihilism." No doubt this view also covers an important part of the story, and No doubt that it govern all But of the story, and so I refer to it. But obviously, having told the story in a different solvers all. Besides disillusion there has been recognition of new needs and possibilities, and at least a partial reconstruction of philosophic method in their interest.

HORACE L. FRIESS.

COLUMBIA UNIVERSITY.

#### BOOK REVIEWS

Matter, Life, and Value. C. E. M. Joan. New York: Oxford University Press. London: Humphrey Milford. 1929. xviii + 416.

Mr. Joad has sifted current philosophical literature with the eye of an unhardened Platonist and has sought to frame an original system of metaphysics that is just to recent thought and obeisant to ancient lore. The result is a stimulating melange, a medley of the up-to-date and the antique, full of difficulties but forcefully set forth. The chief doctrines advocated are vitalism, realism, and pluralism, and perhaps I can best review this system of Mr. Joad's by indicating briefly what he has to say in regard to these three doctrines.

The vitalism is in the main speculative. Materialism, it is argued (Chapter One), is inadequate to describe the behavior of living organisms. "The study of their behaviour reveals the presence of an entity or activity which evades material analysis. entity or activity . . . is what I have called life, of which mind is a particular mode of expression" (p. 28). Mr. Joad later proceeds to work out a theory of life, but, because intellectual analysis in his professed. professed view is capable of dealing only with matter, (pp. 18, 118, 182-185) 182-185), Mr. Joad proceeds here by way of "a short essay in constructive speculation" (p. 138). In this essay life becomes the life Force, and the fable runs that the material universe was at first a chaos without form or order or life, and that in this universe, at some without form or order or life, and that in the determine, there verse, at some point of time which it is impossible to determine, there appeared the appeared the novel vitalizing activity of life (p. 138). "Moved by an instinctive impulse it [life] surges against the matter of which it surges the physical life water dashing against finds the physical universe composed, and, like water dashing against the matter of units' (p. 139). a rock, disperses into an infinite multiplicity of units" (p. 139).

The motive of the into an infinite multiplicity of units to the motive of the into an infinite multiplicity of units. The motive of this violence is not at once apparent, but it seems to that matter it is violence is not at once apparent, and "that life" (2. 148), and "that life" be that matter is a principle of obstruction (p. 148), and "that life chooses voluntarial principle of obstruction itself in a material chooses voluntarily to limit itself by manifesting itself in a material

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rom the German up as a us faith elief in mould, in order that its individual units may be stimulated by the struggle which limitation engenders to achieve powers which will enable life as a whole ultimately to transcend its self-imposed limits (p. 379). The powers life seeks to achieve, we are told, are power of maximum awareness of matter and value, and the goal of the evolution of life is envisaged by Mr. Joad in terms of these power. Thus are strains from Bergson and Aristotle blended. "Life at this ultimate stage in its full and complete expression will be engaged in contemplating reality (equals value), and in this contemplation all its energies will be absorbed; life in short will be exhausted by the activity of contemplation because it will become contemplation" (p. 374).

Mr. Joad informs us that life "as it is, can not be described" (p. 184) and indeed that "life . . . can not be known" (p. 182) This information, I suppose, constitutes the best criticism of the above speculations about life. They can not be based on knowl edge. Still it is clear to Mr. Joad that, though unknowable, life is awareness and it is an awareness of something non-mental and other than awareness. So when he turns to theory of knowledge by way of illustrating the relation of matter and life, the position Mr Joad takes up is naturally a realistic position. The realism, as I read it, is not worked out well. The knowing mind is conceived by Mr. Joad as a uniform process of simple awareness (p. 90). It has no content. Such a process can not create and could not physically alter its known objects. Therefore these objects are conceived as real independent of the knowing process. This version of realism Mr. Joad continues, involves the "view that the constituents of the physical universe are sense-data" (p. 90). Sense-data are the nonmental elements that are actually experienced in the perception of matter. The theory that there are any other elements in the physical universe—e.g., that there are unperceived physical objects in it is ruled out. "A world of physical objects which can never be per ceived does not exist" (p. 91). The reason is that such a world can not be perceived. Mr. Joad would accordingly banish perceived physical objects because they can not be perceived, and yet as a realist would hold that the constituents of the physical world the depend for the physical world the depend for the physical world the physic not depend for their existence or reality on the fact that they are perceived. There is certainly some wobbling here. Moreover, the theory that the physical universe equals non-mental sensa, and sential of Mr. Joad's realism, is not free from at least two further deficulties. The first is that, to avoid postulating a miracle, it Joad is led to insist on the existence of unperceived sense data (pp. 92-93) But the existence of unperceived sense data (pp. 92-93). But there is surely little sense in an unsensed sensum. And secondly there is a difficulty about the location of

1 Cf. C. I. Lewis, Mind and the World-Order, pp. 63-64.

physical at which which which which which which which with the even solipsism regard to being in technical much dimension and the work when th

technica much di nnderne have in faction The tainly a mind to tent, has the rem moreove of know is not tl mean " sense m Paul's bankme have no therefor theory Mr. Jos these ob build ar objects. verse of but whi world" are also are ider thanks an eter of our objection the per externa physical reality. "A sense datum," we are told, "is at the place at which the perception of it occurs" (p. 95), but "the place at which the perception of it occurs," we learn in a moment, "must which what we experience occurs," we learn in a moment, "must which what we experience occurs," we learn in a moment, "must which what we experience occurs," we learn in a moment, "must which what we experience occurs," we learn in a moment, "must which what we experience occurs," (p. 97). In this way the physical world on the brain, and the brain of mind in perception is that of simple awareness of the events that occur in the brain" (p. 98). We are saved from the events that occur in the brain" (p. 98). We are saved from solipsism, Mr. Joad assures us, because "we have seen no reason to regard the objects which mind knows within this private world as being in any sense mental creations" (p. 98). But if we are thus feelnically saved from solipsism, the net result, as I think, is not much different. The physical world, on the present view, is safely underneath our bonnets, and this and the joy and dignity we may have in believing this are, I think, pretty much the point and satisfaction of solipsism.

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The problem of sensa and of our knowledge of matter is certainly an important one, but Mr. Joad, in reducing the knowing mind to a uniform process of simple awareness, empty of all content, has, as I think, taken a false course. This, I should suggest, is the remote root of the above evils in his realism. This reduction, moreover, leads directly to a further difficulty in Mr. Joad's theory of knowledge. It is this. An object thought, Mr. Joad points out, is not the same as an object sensed. When we think "a table" we mean "a whole table," whereas when we sense a table we never sense more than a part of the table. Again, we may perceive St. Paul's as on Ludgate Hill, but we may think of it as on the Embankment or as anywhere we like. Indeed "the objects of thought have no place and no time in the spatio-temporal continuum, and are, therefore, independent of time and place" (p. 121). On Mr. Joad's theory of mind, these thought-objects can not be in the mind—on Mr. Joad's view there is never anything in anyone's mind. Hence these objects must be in the external world, and Mr. Joad is forced to build an addition to the external world, namely, a realm of subsistent objects. "Thus we are driven to postulate the presence in the universe of all existence. Verse of objects which have neither physical nor mental existence, but which but which are discovered by mind as forming part of the external Torld", (p. 124). These neither-physical-nor-mental existents, which are also down. are also described as eternal and self-sufficient, Mr. Joad explains, are identical. Thus to his the his till be as eternal and self-sufficient, Mr. some to hypostatize into thanks to his theory of mind, Mr. Joad is driven to hypostatize into an eternal, external realm of platonic entities the fabrics and Taws of our concepts. In a sense this is not on the present theory very objectionable. For, inasmuch as the physical world is crowded into the percipient's brain, there is undoubtedly room somewhere in the external world. Such an adexternal world for this further addition. But to build such an ad-

dition seems to this reviewer too expensive a task merely for the sake of keeping the mind empty, and indeed it is quite contradictory to the familiar humanness of our concepts—including Mr. Joad's

A word about Mr. Joad's pluralism. The realm of subsistent cognitive objects is the base of a more inclusive realm of independent neither-mental-nor-physical entities, the upper layer of which is comprised of values (p. 277). Accordingly the universe is comprised for Mr. Joad of three main ingredients: matter, life, and subsistent objects (concepts, values). And these ingredients are irreducible, and they do not emerge out of each other as some current theories have it. This is Mr. Joad's pluralism. It is clear to Mr. Joad, however, at least in Chapter Two, that a mere diversity of basic ingredients is not conclusive evidence for pluralism, and by way of disorganizing the universe into a plurality of reals, Mr. Joad seeks to refute the doctrine of the internality of relations—a monistic standby. This refutation, as I read it, does not come off. The doctrine of the internality of relations claims that each entity (substance) as a reality is related in some way to every other and that the relations of an entity therefore constitute an essential element in its content as a reality. Mr. Joad's refutation is, as I understand it, that this doctrine logically means the denial of relata (p. 51), a denial evidently contradictory and absurd, whereas what it logically means in this connection, I take it, is that there are no real entities (substances) that really are not relata. Only if this latter proposition is true—and Mr. Joad so far forth tacitly supports it by pointing out relations between life and matter and subsistent objects—can relations really constitute an integral element in the content of all enti-Thus the case for some sort of monism remains much what it was before Mr. Joad threw his lance, since the question as to an irreducible plurality of ingredients in the universe is, as even Mr. Joad recognizes in this chapter, quite another question.

Those interested in esthetics will find Mr. Joad's sections on the nature of art and the function of the artist worthy of attention And though the reader may be inclined to disagree with Mr. Joad's theory that art is the imitation or copy of fixed non-sensuous eternal forms, and that the poet is principally not an artist but 8 preacher, a tool of the Life Force, he may nevertheless find Mr. Joad's view that great art is based on insight, not on fantasy or gush, satisfying and sound. There is much else in this volume that is also telling and sound. is also telling and right, particularly in its criticisms. The critique of Chaterialism is good, and the critique of subjectivism both in theory of knowledge and in theory of value, is skilful and pointed. On the whole the construction On the whole the constructive sections of the work, however, are too facile, too easily accomplished, and are consequently open, as I have possibly suggested, to a large list of objections. And in particular

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the theory that the goal of the evolution of Life, as distinct from the the theory that all of the evolution of Mr. Joad, is the empty contemplation of goal of the evolution, will strike many in this active goal of the contemplation of transcendent values, will strike many in this active age as a pretty transcended irrelevant echo of an ancient philosophical fable.

The book is to be recommended, not for its results, but for its The book is not for its right in suggesting and sharpening issues and problems. The roume is on the whole well put together, and, if over-repetitious, it is nevertheless lucidly and forcefully written.

D. W. GOTSHALK.

University of Illinois.

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### NOTES AND NEWS

Professor Guy A. Tawney will be on leave of absence from the University of Cincinnati for the academic year 1930–1931 and will go to the University of Illinois as Visiting Professor of Philosophy.

Professor Target To a little of the control of the University of Illinois as Visiting Professor of Philosophy.

Professor James H. Tufts of the University of Chicago will join the staff of the Philosophy Department of the University of California at Los Angeles, as a lecturer for the second semester of next year.

Dr. Donald C. Williams, instructor at Harvard University, has acceepted appointment as instructor at the University of California at Los Angeles.

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## THE JOURNAL OF PHILOSOPHY

### SCIENCE AND LIFE

THE essential question at issue between Professor Herrick and myself is not a new one; briefly, it concerns the relative impriance to be assigned to the generic (universal) and the non-generic particular or individual) factors in the determination of the natal individual. By this term I mean any single particularized enity "given" or otherwise demonstrable as having distinguishable persistence or self-identity in nature. At the one extreme is the deetron, at the other the human being. Electrons are "all alike"; hman beings are infinitely diverse. Yet a certain exclusive propety, uniqueness, or particularity must be recognized as belonging beach individual, of whatever species. In the case of electrons no intrinsic differences, qualitative or quantitative, are evident; the only observable diversity is in external (space-time) relationships; ie, one individual differs from another in position, velocity, or direction. When we say that all are alike, we mean simply that, so ir as experimental evidence goes, any one electron is perfectly abstitutable for any other in any relationship. Substitutability of this kind is implied in all the facts of physics; evidently the stable tistence and regularity of all large scale natural events are directly bound up with this complete ability of each elementary sientific unit to replace any other of the same kind. This condiin is exemplified by all those innumerable stable states, processes, and natural objects which depend for their existence and properties objects which depend for their existence and these include inthally and these include inthally and these include inthally are an arrangement. itually all radiant, thermal, electrical, and chemical phenomena, and especially life itself. I need not dwell on the fundamental im-Metalice of this general feature of physical constitution. It is the that many of the observed uniformities in a process may be tatistical and that the individual components vary; but these briants have their own special properties and range of variation thich are fixed by underlying invariants; i.e., the variations themwhen are fixed by underlying invariants; i.e., the variation bethod of most uniformities. It is significant that the oil-drop of most uniformities. are based on uniformities. It is significant that the property of measuring the individual electronic charge 2 shows 30 to 10, J. H. The Limitations of Science, 'this Journal, Vol. XXVI (1928), P. 186. R. S. Lillie, "The Scientific View of Life," ibid., Vol. XXV 2 A. Millikan's method. Cf. his book, The Electron (University of Chicago Press), for details.

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iden Sie gik, den n. appreciable variation in this ultimate unit. Generally speaking in science as in mathematics, substitutability is regarded as equivalent to identity; hence science ignores the possibility of individual differences between electrons. Similarly, it sees no need of individualizing many other natural units, systems, and complexes, most of which can be dealt with adequately, from the scientific point of view, by generalized images, schemata, or formulæ.

With human beings the case is different. We have a dependable science of electricity; have we one of human relationships? Such a science is possible, it seems, wherever the individual differences of the human units may be neglected without detriment to the broad facts of the situation; e.g., when men are considered (1) in the mass (statistically), or (2) as equivalents in the biological sense, i.e., as similar with regard to their essential physiological or social functions and requirements. In general, modern equalitarian theory and practice (derived largely from a recognition of these basic similarities) tend to single out and emphasize as chiefly important these characters in respect to which all persons are alike and which for that reason are subject to scientific treatment; nevertheless the inescapable fact of human individuality remains and sets sharp limits to the applications of science in this field. Science is primarily interested in the constant or general; there is little doubt that any existing lack of sympathy between science and humanism is derived from their characteristic differences of emphasis, that of humanism being chiefly upon individuality with its attendants of special inherent quality and value. Complaints of the "tyrandy of science" appear, in the last analysis, to have their origin in conviction, intuitive or reasoned, that the individual, as such, is not the proper subject of science.4 At the present time, when the spirit of science has invaded most fields of human interest and activity, is especially important that the nature and appropriate field of scientific method should be clearly understood.

It will probably be agreed that the essential fact of nature, for both science and philosophy, is the union of generic and individual factors. vidual factors in each single natural occurrence or situation. Plato this has been recognized as fundamental, although many divergent views been recognized as fundamental views been vergent views have prevailed as to the exact status of the generic in reality. Now the generic is the special field of science; this characterization defends applicharacterization defines broadly its essential nature and applicability. Science circumstance of the general state of the special field of science and applications and the general state of the special field of sciences and applications are stated as a second state of the special stated as a second state of the special stated as a second stated as a second stated as a second stated st Science aims at determining and characterizing the gent

<sup>3</sup> Cf. the recent book of J. W. N. Sullivan with this title in the "To-morrow" series. and To-morrow" series.

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<sup>4</sup> This is well recognized in philosophy. To quote from an eminest ern philosopher: "No science the philosophy of the control o modern philosopher: "No science, as a science, can deal with individual stations as such." Bosanguet Soise. tions as such." Bosanquet, Science and Philosophy, London, 1927, p. 176.

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end or constant (universal) conditions and factors in nature and is eral or constant the individual only in so far as it is reducible to, or conterned with the openeral—i.e., is typical. The scientific one recording is derived from this possible emphasis on quantitative procedure is derived from this peculiarity, since the quantitative production of the production of the quantitative production of the qua generic is that the phenomena as a constant and uniform (i.e., measurable) igredient. Accordingly, mathematical method applies to generic and not to particular (i.e., unrepeated) characters, and the success of mathematical physics is itself evidence of the degree to which Remeric conditions and factors pervade the natural world.

With regard to living organisms, we may say briefly that they, the other systems in nature, owe their stability or persistence to the generic factors in their constitution. Organic survival presupposes a permanent adjustment, involving a regular correspondence ginterplay between the constant features of the organism and those of the environment.5 We realize this perhaps most clearly when THE CONSIDER the case of a man who is confronted with any immediate occurrence or situation which discloses no generic features; he smable to adjust himself to it—unless by good luck. The biologial function of knowledge is sufficiently indicated by this illustraion. By its very nature knowledge, considered as a means of adjustment, is directed to the generic, i.e., the stable, repeated or dependable features of the environment; correspondingly it requires or presupposes the presence of correlative generic characters and aptitudes in the living organism if the conditions of adjustment are be met. Such considerations show sufficiently that organic surtival depends upon the generic characters of both organism and twironment, i.e., upon those characters which are scientifically de-We observe that living organisms thrive and multiply, and may conclude that their precise and far-reaching scientific characterization is possible, at least with respect to those features which determine survival. These features—metabolism, growth, reproduction, responsiveness—constitute their essential distinguishing characters.

In my address I drew the appropriate moral from these considerations. Since any single natural occurrence or particular, hether living or non-living, exhibits generic, i.e., scientifically dehable, aspects, we conclude that living organisms, equally with honliving natural systems, are subject—to that degree—to the nethods of science. In other words, science is applicable to living in so face. beings in so far as generic features, aspects, or qualities enter indicated by

thave considered this feature of living organisms (usually indicated by the term adaptation) in more detail in an earlier paper in this Journal, Vol.

their composition. Whatever is constant (or regularly repeated): is scientifically definable, i.e., may be mentally represented or en ceptualized in definite terms, even though we may be far from "how and can do no may be far from "how and can do no may be far from "how and can do no may be far from "how and can do no may be far from "how and can do no may be far from "how and can do no may be far from "how and can do no may be far from "how and can do no may be far from "how are the can do not have a second to the control of the control o ing" what the thing is intrinsically and can do no more than to some conventional symbol (usually derived from some constant feature of its manifestation or from measurement) as its mental index (concept) or representative. Constancy, then, may be regarded as the criterion of scientific determinability. The very com. plexity of living organisms, combined as it is with their observed stability in nature, is itself clear evidence that the vital process have throughout their entire range their own characteristic constants, i.e., their regularly repeated and law-abiding features; at cordingly, we must regard these processes as scientifically determinable, even in their minutest detail. The achievements of biological science justify this view, and we may look forward with confidence to an indefinite increase in our biological knowledge and control

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Having emphasized this, I felt bound also to point out the limittions of the scientific procedure as applied to life and its various manifestations. Even after the fullest possible characterization of any single natural phenomenon in generic terms has been made, there always "remains over" a certain residue of particularity not covered by formulation. This residue is small in some instances, large in others (certain things "baffle description"), and constitute a mark of the special uniqueness or individuality of the phenomenon in question. Now what seems peculiarly characteristic of living beings, becoming more and more conspicuous as we ascend the or ganic scale, is just this peculiar element of exclusive particularity, uniqueness, or individuality. Briefly, individualization appears a the most significant outcome of the vital evolution, especially in its higher manifestations among animals, reaching its chief develop ment and enhancement in man. In so far as the human being is unique, non-generic ("in a class by himself"), just so far does evade scientific characterization. His generic characters then cease to have special significance or interest; we take them for granted; we consider him primarily as an individual and disregard his class characteristics.

Similarly, the determination of a large part of such a man's actions becomes non-generic; i.e., such actions are "free" in per haps the only sense in which that much-abused word has any mean

eRepetition may be regarded as coming under the general head of constancy, i.e., as intermittent constancy. Uniformity of temporal repetition, of essential character of the fundamental natural units, as indicated especially by the recent work in physics on interference phenomena in electrons and protons.

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My brief allusion to the problem of freedom 7 was not irreleing my bird and it is important to recoming was not irrelerant; the tonder, and it is important to recognize that the limits of tifically definiteness in the scientific characterization of the individual have deinteness in the limits of definiteness in the causal determination of individual actions. The difference between action and static constitution is obliterated in modern physics. The very particularity of an action implies the existence of a residue of nongeneric determination; and apparently we have here a significant correspondence with our intuition of freedom or self-determination in conscious voluntary action. According to this view, will is the expression of the individual factor in action. The recognition that individual as well as generic factors enter in the determination of each voluntary action would seem to be the key to the problem of determinism in human conduct.8 I.e., freedom is possible to the degree in which a man expresses himself as an individual, and not as a mechanically acting or stereotyped class unit. Any denial of individuality thus corresponds to a denial of freedom; and this is a matter of present practical importance, for just such a denial seems to be encouraged by the modern insistence upon the all-importance of generic factors in human life and behavior. Such insistence readily leads to the fallacious assumption that the generic aspects of a situation or action are the only ones worth considering, or having "true reality," A sign of the times is the erection of behaviorism (in certain quarters) from a department of experimental Mychology—having the wholly legitimate aim of determining the physiological constants of animal behavior—into a philosophy of life. Scientifically educated persons are apt to doubt whether a human being, with all his elaborate and embarrassing equipment of generic structures, physiological processes, and propensities, can have any significant individuality or freedom whatever. of such doctrinaire reasoning is usually weakened by a sufficient lange of experience, and skepticism of this kind appears to be declining among well-informed persons. For the present it may be of the prosent to point to the unique or private status of each human consciousness, a centre of experience from which the rest of the world seen in this perhaps the is seen in spatio-temporal perspective, as furnishing perhaps the clearest test; clearest testimony to the fundamental significance of individualization in the natural process. In order to account for this feature of experience—apparently the index of some innate isolationist or

a In voluntary action the generic factors (e.g., physiological conditions in much the same sense as the physical laws of energy are restrictions—

as ultimate determinants.

centralizing tendency in reality—some kind of monadic theory seems required, but fuller consideration of this topic must be deferred.

On the view represented by Professor Herrick, science involves (1) accepting experience and (2) determining the relations be tween the various facts of experience. It does not attempt to account for experience or to define the intrinsic nature of reality\_ does not need to do so; accordingly, it is delimited sharply from philosophy. He raises an interesting question when he maintains that empirically the thing is its relations, and that science is primarily and essentially a determination of relations.9 Undoubtedly the relational side of scientific description forms a large part of it especially in the exact sciences; but even here the given or immediate experience of the single case, including its qualitative or affective side, is typically reflected or indicated in the scientific representation, although in a partial and generalized form. Can we say, for example, that the descriptive side of biology or chemistry is solely a specification of relations? A rose may be scientifically described as a red flower with a characteristic and delightful fragrance; or chlorine as a yellowish-green gas of evil odor. There is nothing unscientific about such descriptions; they correspond to fact, and they show clearly that a thing is specified scientifically by its constant or verifiable characters, whether these are relations or sensory, even esthetic qualities. Nevertheless, it remains true that in many cases the scientific conceptualization is best accomplished by regarding the complex natural fact as constituted by a synthesis of simpler uniform elements having definite relationships. The relations (including constant modes of interaction) between these elements are then defined in precise terms and are regarded as constitutive of the whole scientific object with its definite properties. elements themselves, being individually equivalent (e.g., atoms, electrons, units of energy), can be symbolized by numbers (designation nating mass, charge, potential, etc.); i.e., their qualitative aspects can be provisionally disregarded, and the relational side then assumes the foremost place in the description. This is especially true space-time relations (dimensions, position, velocity, vector characters) are the class (dimensions, position, velocity, vector characters) acters) are the chief subject of interest. Mathematics applies where ever the elements and relations are conceived as homogeneous and freely substituted. freely substitutable, and especially wherever the results of synthesis are additive rather than emergent. When the essential results are emergent, as (e.g.), in the synthesis of chemical compounds or the development of living development of living organisms, a special characterization must be made for each emorate and a special characterization must be made for each emergent, based on its experiential quality.

º Loc. cit., p. 187.

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Verification, a constant feature of the experimental method in science, is simply a determination, by repeated trial, of the constant or dependable characters of phenomena, i.e., those characters which are always present or which recur regularly. We are thus brought back to the determination of constancies, and their characterization in definite and intelligible terms, as the essential feature of scientific procedure. Since the generic—the aim of scientific determination as such—is by definition that which is common to the various otherwise individualized members of a group (their constant feature or emponent), it is evident that its existence and character can be determined only by repeated observation.

If, then, the regularity of an experience is that which qualifies it as a subject for science, we may regard any experience which is repeated and is common to a large number of persons as possible (even if sometimes not fit) material for scientific characterization. Conceivably, as Professor Herrick points out, the psychologist may be interested in the subject of filial piety; but it is just here, I should contend—while agreeing that filial piety has constant (or scientific) characters which are relatable to antecedent, consequent, and other conditions—that the limitations of scientific treatment show themselves most clearly. What is generic in filial piety, or in personal love, is of small interest or importance compared with what is individual. This consideration indicates rather clearly the inadequacy (in many cases) fallacy of the Freudian methods of psychological analysis, and in fact the limits which must be assigned to psychology as a science. That which is unalterably and peculiarly individual an not be subsumed under generic rule. If we attempt to do so, we miss its peculiar reality and significance. For example, I (personally) Sonally) may be only moderately interested in the generic features of Bach's D. C. Bach's D-Sharp minor fugue; 10 no doubt such features exist and have their have their technical importance; but what is essential to this composition is its unique and perfect individuality. It is quite true that this individuality would not be what it is—in fact could not have come into existence—apart from the supporting or conditioning universals of the support of the s Versals of the science of musical composition; but of course this is the very room illustration. the very reason why I have chosen a work of art as an illustration. In the best art the generic and the individual factors are present in a peculiarly intimate interfusion; while the individual character is just that which is acknowledged to be of chief importance and inexplicable by reference to the generic.

10 No. 8 of the second book of the Well-tempered Clavier.

The question whether there can be such a thing as a scientific history or a scientific biography is closely related. Is a science of unrepeated events possible? Is not such a conception a contradic. tion in terms? Clearly we can not make a generic proposition out of an individual occurrence. In a recent scientific discussion on the application of thermodynamics to life phenomena, Professor Donnan refers to the "theory of individual action," 11 but it is difficult to see how there can be such a theory, since theory in its very nature is generic—a frame into which the individual occurrences or particulars are fitted. The virtue of a valid theory, e.g., the theory of gravitation, is that it applies to an indefinite number of special instances. Science indeed may be defined as the theory of generic action-ie. when it is not the theory of generic form, order, or structure, Science, however, is not to be identified with logic. It may be that mathematicians tend (professionally) to disregard individuality: and natural science, which is largely patterned after mathematics and aims at conforming to mathematical canons, shows the same tendency. We may agree that the order of nature is its proper field, i.e., the determination of natural laws. But nature, although dependent on a background or substratum of order for its existence and evolution, can not as a whole be described as orderly and nothing else. It exhibits also an arbitrary character, not only in its entirety, but even in its detail. This means that science, taken alone, can not account for the particularity of natural events.12 Nevertheless, its field, in identifying and formulating the orderly elements in natural occurrence, is a sufficiently wide one; and to regard any limitation of its applicability as a disparagement, as apparently is done by some of its votaries, is to misconceive both its nature and its essential value. Since science deals with universals, it is only to be expected that its range of application should be universal. But this very characteristic, which constitutes its essential strength, disqualifies it for dealing completely with the individual In so far as an individual is a composite of universals, science may be said to apply; but what remains over, i.e., the element of individual vidual uniqueness, inevitably escapes its grasp.

As Professor Herrick indicates, the problem of the ultimate factors in the determination of the individual is a metaphysical rather than a scientific one. I should urge, however, as an amendment, that science, being the field of the generic (an ingredient in every particular), must contribute its share to the solution of the problem. Modern philosophers from Leibniz and Berkeley to Professor Whitehead have regarded God as the final ground of determination.

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<sup>11</sup> F. G. Donnan: Journal of General Physiology, Vol. VIII (1926), p. 685.

12 I.e., the particular in nature can not, qua particular, be deduced from the general.

pintion—i.e., as that which is responsible for the actuality, as dispination—i.e., as the abstract possibility, of natural existence. The inguished from the abstract vague, and for this inguished from is inherently vague, and for this reason and also one of God is inherently vague, and for this reason and also contain associations appears unaccentain one of certain associations appears unacceptable to many scienthe minds. This, however, is immaterial; what is essential in any view is that it regards the ground or agency of final deternination as primarily self-determining, and as unitary rather than pluralistic, the basis for the latter preference being a recognition phiralisate, a fact in the universe) implies coherence and coherence

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I have been called to task by scientific friends for the assertion that there is an arbitrary element 13 in even the least detail of Biure, 4 and I may close with a brief indication of what I believe to be the scientific justification for this position. First, we may refer the arbitrary character of a single ultimate physical event, such as a quantum leap, to the arbitrary character of the whole universe of which the single event is a part, on the general ground that the wherence of the cosmic system implies the determination of each part, to some degree, by the character of the totality. But this wality is arbitrary, since there is (by definition) nothing outside of itself to determine its special character. Or, second, we may diregard the whole, and confine our attention to the single quantum erent, having regard to Heisenberg's principle of indeterminacy, low regarded as scientifically well established. According to this principle an element of indetermination and one of determination the condition of constancy represented by Planck's constant are both present in each such event. The prediction as to the time and direction of the individual leap is a matter of probability, ie, no fixed and complete determination can be assigned to the single event. Yet with large numbers of similar events the deterhinate character emerges into prominence, and the observed regularity of l brity of large-scale physical action depends upon this. This regularity shared states are compared to the state of the sta arity shows that, as regards the individual leap, some element of determination is present, otherwise the summation would not give determination. When the numbers are large, as in the physical Action of our ordinary experience, the purely random, indeterminate arbitrary elements compensate one another statistically, and the determinate elements compensate one another statistically, the total situation of the total situation. the total situation. 15 The arbitrary elements are, however, present

Is Lee, one not to be accounted for on general grounds.

usual of outside in the physical or operational sense, means simply of outside in the physical or operational sense, means simply uncontrollable. This, independent of outside influence—hence experimentally uncontrollable. This, at present of outside influence—hence experimentally uncontrollable.

A present, appears to be the case with each single electron event, although it is that future.

The situation. There is, however, hostile influence—hence experiment event, although that future experiment may change the situation. There is, however, as part of the inner detail16

Experimental physics indicates that this type of determination is a universal feature in natural occurrence. The constant condition (or set of conditions) is always present as a necessary factor in each single occurrence; also the non-constant or individual characteristic (or set of characteristics) which determines the special or unique particularity of the occurrence. The quantum case is one of special philosophical interest, both because it is basic to physical action in general, and because in it the two factors of generic and of individual determination appear side by side in sharp contrast to each other, yet inseparable.

RALPH S. LILLIE

University of Chicago.

#### IN DEFENSE OF ABSOLUTE ETHICS

XPERIENCE of values differs from experience of phenomena. This is not to posit two kinds of experience, but rather to admit two ways of interpreting experience, in terms of cognition or in terms of purpose. Through observation and induction it has been possible to build up and organize the physical sciences, and although the highest achievements of scientific investigation purport to be no more than working hypotheses, yet the structural method of if, then is not liable to attack. It is, as Kant demonstrated, the essential method of reason in dealing with the objective data of sense experience. But if, then knows no preferences, whereas actual experience yields grounds for the expression of preferences no les than for the organization of facts. Thus Kant discovered the in herent operation of the regulative category of moral experience.

The study of history shows that in the development of civilization man has been more concerned with the proper use of the regulative than with that of the formative principle. Prior to the modern His he has evaluated facts more carefully than he has defined them. attitude toward science has been suspicious, even hostile because, of its own testimony, it eliminates values, and when you have taken away my gods, what have I left? From the point of view of moral nothing physically inconsistent in assuming the presence of internal or indirections, not accessible from the point of violation and indirections. ual factors, not accessible from without, in each centre of activity. Eg, the very large and as vot accessible from without, in each centre of activity. very large and as yet experimentally inviolate internal energy of the atom to

machs to be accounted for. If such factors were to operate physically, it would be in a manner that to an extension of the archive. be in a manner that to an external observer would appear as arbitrary. or, I have attempted to show I havior, I have attempted to show how this small-scale arbitrary character express itself, by transmission express itself, by transmission associated with amplification, on the large state of the whole organism (Science, 1927, Vol. LXVI, p. 139).

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onsciousness, it is not necessary that science should substitute evil for good in order to be dangerous; the mere elimination of values for good in the state of the st gives a partial of experience.

Science is by definition abstract. Morality is concerned with the Science is of science is integral to the partial knowledge of science is integral to the whole of truth can partial knowledges admit the necessity for science. In its proporal country science leaves values out of account, but eventually its own ams, method, and achievements are evaluated.

Although attempted solutions to the problems of ethics are hisbrically prior to the efforts to solve the problems of pure science, logically the ethical interpretation of life is the more complex and subsumes the other, simpler interpretation. The strenuous efforts which from time to time have been made to subject ethics to scienthe discipline can not be cited to the contrary, for the ethicalgientist undertakes to justify his method as a better way. true that the attempt to adopt the scientific attitude in the study of ethics has rendered invaluable service in diminishing man's selfimportance. Uncriticized by science, the natural desire to achieve purpose degenerates into a tendency to ascribe purpose. Instead of affirming as we can and should that our world can be adapted to or ends, we are all too prone to assume that it was created for our To this extent the influence of science upon ethics has a solutary effect, but further subjection of ethics to science denatures thics. Knowledge about values and theories of value may supplant, but do not replace, value judgment. Although man can no longer regard himself as standing proudly in the center of the physical universe—such an assumption were as ridiculous to-day the theories of alchemy and Black Magic—yet the ethical point of view is necessarily anthropocentric. Every finding of science is frentually humanized, every problem estimated in its relation to han, for man is his own point of reference. His last question always remains, "What does this mean to me?" or, "How will this affect my life of the state of t affect my life?" Science follows through the correlation of ex-Perience implicit in experience as given, but ethics selects its own melation, seeks "a more excellent way." A scientific study can hay be scientife way. A scientific science hay be scientifically inferred, but it is beyond the reach of science the phenomena progress. Since science studies all life, it studies the phenomena of the good life, but it is more than science if it Indertakes to make life good.

Civilization is the good.

Make life good.

The good the manifest proof of humanity's ceaseless effort are life good. to make life good. This is not necessarily to say that history is the the life good. This is not necessarily to say that mistor, the life good of "one increasing purpose." Although some who have others find futility and the past affirm such a revelation, others find futility and

chaos. Yet it is always the chaos of cross purposes, the futility of any force operating against an equal and opposite force. No one can deny the genuineness of the struggle. Even granting the hypothesis that life in itself may be neutral and valueless, if man does not truly discover value in life, he immediately imputes it. He is not content to adapt himself to the existing scheme of things but undertakes to "mold it nearer to the heart's desire."

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Essentially the heart desires the ultimate and unchanging, but every effort towards realization must take definite place in time and suffer the dissolution of all finite objects. Customs, creeds, laws and institutions have their exits and their entrances; they serve in turn to objectify moral purpose. The length of their duration is proportionate to human interest which they serve. All are relative to human life and at utmost coterminous with it. Perhaps it is here that the pure scientist finds the grounds for that superiority which he sometimes affirms for science above ethics. his findings become part of the wealth of human experience and as such must take their place in the system of values, nevertheless the truth of his findings, as pure truth, is not subject to human evaluation. As pure truth it transcends all finite limitations in cluding those of human life. In pure truth the scientist finds an Absolute, and in the certainty of this Absolute he can regard with equanimity the possible disintegration of our entire solar system There is that in his attitude which recalls the earlier theologians, "willing to be damned for the glory of God."

Since ethics is coterminous with human life, it appears at first to be impossible to establish it upon such an absolute basis. If human life should disappear, would not values disappear with it Unless, if values be eternal, humanity is immortal. Faith in this second proposition has, in past ages, given rise to various theories of transcendental idealism. These theories have afforded tremen dous satisfaction; they have provided man with that hope of ultimate achievement without which life were unbearable. Neverthe less, usually they are subject to censure as being no more that wistful speculation wistful speculations, creations of fancy. Instead of releasing the quality of goodness, toward which humanity strives, from the spatial and temporal limitations of experience, these theories tend to trails late human experience into another world which differs from the physical in degree only, not in kind. How prone is human thought to insist upon exists. to insist upon existence as a condition of perfection is indicated in the prestige long enjoyed by Anselm's familiar proof of the exist ence of God.

It would seem that the founder of Christianity made an attempt to assert the pure quality of goodness when he said, "The Kingdom of Heaven is within you." But he said also "In my Father's

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House are many mansions," which, according to orthodox interpretation, means that the heavenly kingdom is not only a spiritual state, tation, means that the heavenly kingdom is not only a spiritual state, but an actual realm. The subtle schoolman could distinguish between subsistent and existent, but to the average man, to be is to be somewhere at some time or for all time. He insists upon putting his feet upon solid earth, or upon more solid golden streets. The metaphorical descriptions of heaven are regarded as metaphors not because they symbolize in sensible terms spiritual experience which has no sensible quality (somewhat as a flag symbolizes a nation) but heeause they are inadequate to the description of heaven. The difference between this world and the next is understood as a difference of degree rather than in kind. The "spiritual body" of which St. Paul wrote would presumably enjoy "spiritual" sensation.

The doctrines of the Christian Church as defined in the Middle Ages set forth a complete cosmography of the World to Come. As there is a Heavenly Kingdom for the blessed, so too there must be an appointed place for the wicked. Although neither the Gospels nor the Epistles give any explicit description of hell, by logical implication hell must be, and must be the very opposite of Heaven. If a man had merited divine grace he would ascend into Heaven, or if he had died in his sins he would descend into hell. Thus some would be damned, but none were lost. Whatever a man's ultimate fate might be, he kept his soul's integrity, his self-importance. And this self-importance is essential to moral development.

The broad sweep of modern science has banished Heaven and hell from the intellectual cosmos. No one is damned, but all are lost. If the whole solar system be but a vague bit of mist in the milky way, can human action have sufficient relative importance to weigh in any balance? What is the cosmic significance of a murder committed in Perry, Florida? Why strive to make life good since it is impossible to make it anything at all? Indeed, is not good an empty phrase? Or if it have any meaning, is not the only possible good to avoid the vanity of self-delusion, the futile pursuit of moral perfection?

It were unwarranted to say that any scientist intends that such implications should be drawn, but it were idle to deny that they have been drawn, and that the findings of science have provided their ground. Unintentionally it may be, but undeniably science has progress depends upon the way in which we meet it. We can not continue to ignore it. Already we are painfully conscious of moral yet when we are called upon to help them establish an ultimate uncertain and inadequate a foundation we have for our moral

code? What answer can we give to the question, "What difference will it make in a thousand years?"

Inevitably the human relation brings scientific knowledge into the sphere of ethics. A twofold theory of truth is a poor make. shift; the effort to reconcile truth and goodness must ultimately be made. Man may learn to study the universe without seeking to evaluate it, but his specific problem as a human being remains a problem of value, and since he is his own point of reference, the core of the problem is the question of his own worth.

But is it true that the admitted cosmic insignificance of human life undermines the principle of morality, or, paradoxical as it may seem, does the discovery that physical man is relatively indiscernible in the infinite physical universe lead us to posit the absolute quality of morality? Does it not lead us to a better understanding of Spinoza's phrase, "sub specie æternitatis," so that we fully appreciate it as meaning out of time, not from everlasting to everlasting. If there be goodness, it must be in its own right, pure quality. Values have reference to phenomena, or properly, values are the meanings of phenomena, but values as such do not exist in space and time. It is not hard to accept the statement that values are not extended, but it is more difficult to admit that they have no duration. We laugh at the question, "How large is virtue?" but when asked, "How long will it last?" we piously reply, "Forever."

Yet if space and time are dimensions of the physical world, one question is as absurd as the other. We know that goodness is "imponderable." Can we not understand that it is not durable! Suppose I should kill my neighbor, and immediately afterwards some natural cataclysm wiped out the whole human race. Were it then true that my act "made no difference," or according to the absolute, timeless criterion of values, would I have sinned irrevocably! Does the fact of escaping punishment have any bearing upon the quality of the deed? Were there no consequences of my act, would the act be therefore of no importance? The hypothetical case is fetched so far that it borders on the absurd, but unless we push the question to its extremity, so that it appears in pure timelessness, are we sure to grasp its significance?

Kant connected the regulative principle of the moral law with a hypothetical Kingdom of Ends, thus rationalizing orthodox piety and saving Heaven for faith. But is such procedure necessary! Must pure goodness, the spiritual value of life, be everlastingly contingent? Does even the preservation of Christianity—and as our western civilization is predominantly Christian, our customary ethics basically Christian ethics, the advancement of Christianity is of primary importance to western thought—involve a literal acceptance of an "After World?" Or is it possible to maintain the spirit of

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Christianity without ignoring or futilely gainsaying the discoveries Christianity which necessitate a change of emphasis, perhaps even of of science white "For the truth of our faith becomes a matter of interpretation? "For the infidels." said Thomas Acris interpretation, the infidels," said Thomas Aquinas, "if any Cathoridicule among, in any Catho-ridicule among, presents as it, not gifted with the necessary scientific learning, presents as doma what scientific scrutiny shows to be false." (De potentia dogma what does not be potential in Michel's translation of Grabmann's Thomas Aquinas, p. 37.) Whatever scientific scrutiny may be able to do in reducing to

ridicule belief in an actual heavenly place where the good are remarded, it can not affect that "Kingdom of Heaven" which is "within you." If we accept the doctrine of Absolute Goodness as Absolute Character we have found an adequate ground for rightcousness, in itself. Then the life span of an individual, indeed, of the whole human race, is quite beside the point. Not that absolute goodness exists apart from human conduct, because its only existence is in and through human conduct, but that as value Goodmess is not commensurable with space and time. Thus with respect to their value human acts are independent of space and time.

Science makes no apology for truth; neither need ethics defend goodness. Every phenomenon is what it is and contributes its bit of evidence as to the nature of the whole. So, too, every purposeful att displays meaning. Like the data of science, the data of ethics are what they are, and are relative to the unifying principle of the whole. But whereas the method of science, searching for truth, must be the method of disinterested discovery, the method of ethics, acting towards perfection, must be an interested effort towards value.

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### A REVIEW OF CURRENT SOCIAL PSYCHOLOGY

THE Editor has asked me to attempt a description of "what social psychology ought to be in the light of what it is." No one who is watching the progress of experimental psychology ean fail to notice the extraordinary increase in the number of experimental researches upon social behavior. Part of this is the latural growth of that experimental social psychology which began with German and American educators early in the present century has received able and enthusiastic support from such men as This he thought might be done in the form of a review of a certain recent should be social might be done in the form of a review of a certain recent should be social might be done in the form of a review of a certain recent should be social might be done in the form of a review of a certain recent should be social might be done in the form of a review of a certain recent should be social might be done in the form of a review of a certain recent should be social might be social might be done in the form of a review of a certain recent should be social might be social m text-book in social psychology. As soon as I explained where this would lead, near thought is a direct answer to the Editor's Restion, Without sin I should attempt a direct answer to the Editor's Psychology. As soon as I cap.

Westion, Without singling out one text-book for what might be considered unF. H. Allport, H. T. Moore, and G. B. Watson; a month-by-month perusal of the *Psychological Abstracts* shows that the titles listed under "Social Functions of the Individual" include more and more experimental studies. However, more than half of the experimental social psychology of today is investigation into the social behavior of *children*—investigation which for the most part has little by way of "experimental psychology" as forerunner, but derives mainly from the recent rapid development of systematic child psychology in response to a burning social and educational need.

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The quantity of research which may fairly be called experimental social psychology is roughly indicated by the fact that the writer finds about twenty such titles appearing each month; and is be wildered by the mass of unpublished studies (for the most part studies now in progress) of which he hears through various channels. One may say that very roughly 60 per cent. of this work is American, 25 per cent. German and Austrian, and about 10 per cent. Russian; one of the spectacular events in contemporary psychology is the rapid increase in both quantity and quality of Russian research in both social and educational psychology. (British and Italian psychologists are on the whole uninterested, while French and Swiss work is chiefly limited to the linguistic field.) In short, experimental method has made amazing advances in social psychology, especially in America, though if one judged "social psychology" by its text-books one would scarcely suspect the fact.

The number of pieces of experimental work now available (for the most part in the periodical literature) is somewhere between 1,000 and 2,000. The figure to be chosen depends first on the precise definition of the term "experimental"; it depends secondly on what quality the work must achieve in order to merit inclusion. But taking the lower limit as around 1,000, and noting that this material ranges all the way from the experimental study of the "despotism" of a 15-months-old child over one three months his junior to the experimental perimental comparison of "group thinking" and "individual thinking" and "individual thinking" ing," and all the way from the measurement of the influence of competition upon the behavior of schoolboys to the quantitative analysis of special appeals in a political campaign, one is a bit puzzled at the Table of Contents of most of the books labelled Social Psychology which continue to pour forth from the press.

Not only experimental to pour forth from the press. Not only experimental work, but also careful "observational" studies are usually studies are usually neglected. Good old friends like "Mobs" and "Cowds" still standard of the conduction of the conducti "Crowds" still stare forth at us; in fact they receive elaborate explanation (as far as the writer knows, only one careful observational study of a mob or crowd has ever been made, and it is rarely quoted). Headings or "The writer knows, only one careful or rarely quoted". Headings or "The writer knows, only one careful or rarely quoted." quoted). Headings on "Propaganda" and "Public Opinion" prominent (a very for prominent (a very few careful studies exist here, but they could

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bservararely n' are be adequately dealt with in five pages). The dear old "Instincts" and "Reflexes" never fail of their space (though one could safely and "Reflexes" never fail of their space (though one could safely and "Reflexes" never fail of their space (though one could safely and "Reflexes" never fail on these points; the approach will be a intricate biological data on these points; the approach will be a "critical" and "sound" exposition of the problem, without embarrassment from complicated experimental evidence). Very simply, then, the periodical literature is full of a new kind of social psychology, while the books on social psychology (several each year) go on telling the old tale.

The development of experimental social psychology has come so fast that there is no place for it in Departments of Psychology as at present organized, while at the same time enlightened students are wearied with an arm-chair social psychology which they have intelligence enough to recognize as a very primitive and amateurish social philosophy. Of course, all the social sciences are undergoing more or less upheaval as a result of the great emphasis upon inductive method, and the consequent disruption of "systems" which are rendered either obsolete or at least uninteresting. The development in sociology is so rapid that it is hard to tell whether a "Department of Sociology" in a great university can simultaneously serve the two functions of doing exact social research and integrating the social sciences after the manner of social philosophy. Now social psychology is in a similar dilemma. Can it play the game of exact research and at the same time serve as an integrating or interpreting discipline within the cultural sciences? I suspect not. The business of organizing and interpreting the complex phenomena of the cultural sciences is scarcely the domain of the psychologist. It is a business which very much needs to be done, but it needs to be done not by proponents of a special viewpoint economists, human geographers, or psychologists—but by men thoroughly at home in Several social sciences, e.g., anthropology, economics, ethics, and who have in addition historical perspective and philosophical acumen.

Yet, though few individuals are qualified to do this sort of synthetic work, there is nevertheless a pressing need for interpretative books in social psychology, and when their authors have taken are of immense value. But these interpretative books do not, as a rule, bear the title Social Psychology. In fact, they bear titles which One of the chief purposes of this article is to call attention to them example, like Thomas and Thomas' The Child in America appears, sest to most philosophical readers. It combines, with extraordinary references to the best recent research on the social

behavior of children with a critical and frequently profound appreciation of the rôle which child psychology is playing in the recon. struction of the social sciences. One of the authors has long been known as a sociologist; the other turned from sociological statis. tics to the task of refining the methods of what she prefers to call "experimental sociology." The book shows, to be sure, a little dogmatism and over-simplification here and there. The fact remains that the authors have written both a competent and a fascinating book. But more than that, they are pointing the way towards a social psychology which will found itself upon genuinely scientific research, and at the same time so ally itself to the other social sciences that it will be of some real use to the social philosopher. The fulfilment of either of these tasks alone would make the book well worth reading. A book like this evidently means far more to the development of a scientific social psychology than most of the books which the reader will find listed in the catalogue of any great library under the "social psychology" heading. The same is true of Charlotte Bühler's remarkable Soziologische und Psychologische Studien über das erste Lebensjahr, Rice's brilliant application of statistical methods to political psychology in his Quantitative Methods in Politics, and Lorimer's scholarly and profound survey of modern research on the acquisition of language as a means to systematic study of the rôle of speech in thought and in social behavior (The Growth of Reason).

Books like these show that the collecting of facts need not be tedious in social psychology any more than in astronomy, and suggest perhaps that systematic theories as to human nature may profit as much from a sound factual foundation as do theories as to spiral nebulæ. Reworking the old concepts till they are worse than threadbare is, of course, an easier procedure, and it is quite useless to hope that the inductive trend in social psychology will show itself in the text-books until the weary student, discovering what he is missing, formulates his demand.

It will probably be several years before the authors of text-books fully awaken to the uneasiness which students, as a matter of fact, are already betraying; and they may be able for a while longer to resist the trend towards a social psychology based upon the available research for its able research findings. But the forces which are already at work in the re-making of the science will go out into the highways and byways and compel them to come in.

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#### BOOK REVIEWS

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Logic for Use. F. C. S. SCHILLER. New York: Harcourt, Brace & 1930. Pp. viii + 469.

Surrendering his old term "humanism" in favor of "voluntarism," thus to mark more sharply the contrast to intellectualistic logics, F. C. S. Schiller announces his Logic for Use as a constructive sequel to its destructive predecessor, Formal Logic. In the new work, the author would abandon "academic controverting" for "the luxury of straightforward exposition." But the controversial habit is so strong! It is in this new book with the same verve and wit which make Schiller's criticisms so readable, although here it rather hampers the readers' effort to focus on the announced exposition.

Voluntarist logic, a logic of discovery, which must lead to novelty, not only relative to premises, but relative to all knowledge, the author says "openly rests on personal meaning, purposive thought, freedom of choice between alternatives, desires, postulates and interests, hazardous selections, probable reasoning, and unending verification" (pp. 440–441).

Along with ethics and esthetics, it is a normative science, with evaluation its raison d'être, its particular concern being with "cognitive values," i.e., true and false determinations in solving any situational problem (pp. 34 and 98). Its "worthiest and most proper, though rarest use is reflection on actual thinking" (not on metaphysics and grammar). Consequently its divorce from psychology is "unthinkable." Logicians who seek this divorce are pronounced too lazy to distinguish between what a proposition meant to its maker, means to its hearers, and may mean to posterity (p. 34); they merely want to idle with "meaningless propositions," a sport which Schiller says was devised before there were chess and bridge to kill time. Psychologists, however, are charged with failure to undertake the description of thinking in its purposive sense With this valuing and meant there will be critics who

With this valuing and psychologizing, there will be critics who will say that in leaving the nest of "meaningless" certainties, which is formal logic, and which Schiller calls "Cloud Cuckootown," logic of ethics, esthetics, and psychology for hatching out its novelties. Be that as it may, Schiller's Logic for Use becomes "a fascinating through truth-seekers in the achievement of their purpose" (p. 48).

Perhaps the best way to do the author justice is to summarize apparent metaphysical assertions, for these two aspects will

probably do more than anything else to make friends or enemies for his present summation of his life-long crusade against logic, waged nevertheless, in the name of logic!

As to method, Schiller makes a clean sweep of all old logics; "Induction is not formal proof—'system' means rotation in a circle —the search for premises means retrogression instead of progress and 'intuition' is unabashed assertion' (p. 330. Each point is ably amplified).

The ideal of voluntarist logic is not to prove, but to improve knowledge. Its raw materials are truth-claims and value-claims i.e., any thought experiments, which, like Russell's propositional functions, are neither true nor false in themselves, but which turn into true and false propositions when made specific by selected meanings in a particular problem. In this logic, lack of meaning to make a proposition empirically true is deemed a far graver danger than self-contradiction (pp. 17 and 74).

Emphasis is persistently laid on selection. Voluntarist logic is concerned only with relevant parts of a whole, never with an absolute per se. It deals with sumpta, not data; logic starts with the "taken," i.e., the taken-to-fit-the-situation and not the "given." A conclusion, so far from being bound by the original sumpta, is really tested by "the advance made after leaving the starting point" (p. 386). Such is declared to be the scientific method, and "the application of Scientific Method is universal" (p. 386), though the author hedges a little in a footnote saying that in practical, moral affairs "it may sometimes be undesirable to allow full liberty of experimenting to all and sundry on all occasions." Experimentation in the sense of venturing to act on a probability which has been formulated from the suggestions of past experience as applied to present sumpta, is always a double-edged tool, with alternative hypotheses which might have been chosen. Ergo, selective methods are inevitably risky.

The voluntaristic logician must have the spirit of adventure rather than a craving for security (p. 83). Scientific facts are never absolute (p. 265) absolute (p. 365) and the data of knowledge are never really depersonalized (p. 374). "Every judgment is a personal act, by which its maker committed in the data of knowledge are never really maker committed." maker commits himself and assumes a responsibility he can not disayow" (p. 202). avow" (p. 202). Thus risks begin every time we stop to think Such judgments are stop to the stop to th Such judgments are vehicles for the growth of knowledge and the evolution of reality (1997) evolution of reality (p. 206). Schiller discusses in detail (pp. 445-449) this "making points of the growth of knowledge and (pp. 445-449) this "making points of the growth of knowledge and (pp. 445-449) this "making points of the growth of knowledge and (pp. 445-449) this "making points of the growth of knowledge and (pp. 445-449) this "making points of the growth of knowledge and (pp. 445-449) this "making points of the growth of knowledge and (pp. 445-449) this "making points of the growth of knowledge and (pp. 445-449) this "making points of the growth of knowledge and (pp. 445-449) this "making points of the growth of knowledge and (pp. 445-449) this "making points of the growth of knowledge and (pp. 445-449) this "making points of the growth of the growth of knowledge and (pp. 445-449) this "making points of the growth of th 445-449) this "making of reality" which starts subjectively with a personal real comprised a reality which starts subjectively with a personal real comprised and reality which starts subjectively with a personal real comprised and reality with a personal real, comprised of the thinker's sumpta in the immediate situation, and which situation, and which emerges as a new reality with a new bearing

<sup>1</sup>Cf. Dewey, The Quest for Certainty, p. 178.

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on the maker, the situation and the terms by which it was appre-"on the maker, it develops into a new value, handed" (p. 205). In other words, it develops into a new value, for Schiller identifies reality and value.

Judgment for Schiller, who grants it is the central theme of Judgment act, "a characteristic human attitude which can logic, 18 a primary of the resolved into any other" (p. 218). It is subsidiary to perpot De resolutions only in difficulties affording time to think. In general, Schiller's analysis of thinking is analogous to the first four of Dewey's steps of a complete act of thought, but not to the fth, for Schiller does not identify thinking and final action. "Sooner or later," Schiller says, "the time comes in every situation when thinking has to stop and action, modified, enriched, improved by thought has to follow" (p. 201). This voluntaristic transition from thought to action is the judgment. No judgment is eternally true, but it is true enough for the purposes of human knowing if it is true in its context, as an adequate response to the situation out of which it arises and with which it is meant to deal (p. 239). In fact, "there would be nothing wrong or intellectually contemptible in never using any but 'particular' judgments at all' (p. 243).

Logical inference, it seems, should be the chief psychological instrument of the will to power (p. 246). Inference occurs whentter a judgment fails to lead directly to action, i.e., when, lacking eff-evident value, it needs support either retrogressively by a retreat to substantiating premises—or progressively, by advancing to onsequences which will confirm the original judgment. It may do occur when a judgment is so successful that it tempts us to pursue the subject (p. 248). In either case the goodness of the inference is psychologically evaluated, for a better inference may bare been "better born" in a better mind, and it may better stand experimental tests. The amount of verification needed depends on the degree of antecedent improbability, the importance of accuracy, and how and how credulous or critical are those concerned with it. Inasmuch as Schiller sees no way for a Logic for Use to transcend the linits of personality, "there is no one definite point at which verification feation personality, "there is no one definite point at the station merges into proof for all minds" (p. 351). Verification unending and probability replaces validity.

The syllogism thus becomes "a form in which thought-experiheat is conducted, and its conclusion serves merely to guide expecthin, (p. 291). As to error "it is far more important to develop a technique for detecting and correcting errors, than a paralyzing to are to a specific with delusive and correcting errors, than a particle to avoid them, or than to deceive oneself with delusive promises of infallibility'' (p. 187).

Thus a voluntarist logic begins with a study of valuing and of knowing prothe knowing process with all their roots and ramifications in human personality. It is empirical (not a priori), it is attractive (not coercive), it is selective (and there is through Schiller's whole reasoning an assumption of Darwinian natural-selection to determine the continuance or elimination of any logico-psychological value), it is risky (attaining only the probability sufficient for action), it is valuable (not valid). Its rôle is to advise, not dictate to all knowers. Such a logical method, Schiller maintains, already exists in fact and common use.

Metaphysically, comment must be cautious, for the writer denounces the old allegiances of logic and metaphysics. Old, objective essence gives way to usable essence, which is "whatever aspect of a thing is most important for the purpose in hand," hence pluralistic, subjective, debatable, and relative (p. 21).

The absolute is decried as a "rag-bag" of all things—"it is nothing but the locus and meeting place of all contradictions" (p. 85). Relevance, therefore, should replace it as the determinant of intelligence.

The only universal law in the realm of values is divergence of tastes. Agreement is an achievement, not a presupposition (p. 100). "Values always hunt in couples and imply a tacit reference to their opposites"—they are basically just psychic facts. The value of objects "is a reaction which they provoke and a relation to us which we confer on them" (p. 104).

Seven old theories of truth are abolished ad seriatum, with a kindly word for only two. Correspondence with reality may be acceptable if it is perceptual and purposive correspondence and does not involve transcendence and independence. Independent truth may also be condoned if taken in the sense of truth which does not remain tied to the particular judgments and acts which generated it (p. 136). Humanistic truth, on the other hand, is born out of psychological interest in pursuit of some purpose. All truth must be useful, but Schiller emphasizes that this proposition converts only per accidens, and one may not justifiably say "anything useful is true" (p. 159). Eternal truths are those which are put out of relation to time by abstraction, and abstraction is only selection which may be valued as an idealization or a mere fiction according to taste (p. 407).

Novelty and progress are more vital to reasoning than proof and assurance (p. 322). Absolute truth is, at this point, recognized as a possible ideal towards which knowledge moves. Schiller substitutes the lure of infinite progress for the bugaboo of infinite regress. The Will to Bolizer truth is at this point, regress to the bugaboo of infinite regress.

The Will to Believe is resolved into the Right to Postulate (p. 339) and this, psychologically, issues from its maker's total personality. Thence to what Schiller reiterates from his Studies in

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complete with the complete with the world is composed of a plurality realism, which "believes that the world is composed of a plurality of things (substances, substantives) and persons (subjects, professions), existing in their own right and having qualities (adjectives) and relations with each other, acting and being acted upon (verbs, active, passive, intransitive, etc.) according to causal and teleological laws (which are developed out of our experience of compulsion and willing)" (p. 388).

Thus stands his sequel to his previous works, still controversial and in some places unduly repetitive, but withal vigorous and rich in suggestion.

When one is thus confronted with a Darwinized logic, rooted in a theory of natural selection, and trusted to eliminate the unfit in the course of experience, it is tempting to wonder if we have not in our midst a new type of being—the bio-logician—who, like the bio-chemist, has a dual rôle which present conditions may actually necessitate. The slogan of such a movement stands out—"Let experience be your guide" and, it must be added, "not blind, but self-conscious experience."

The plaint persists, however, this offers no criterion, no absolute guide. Selection, yes, but selection according to what? Does not, however, the situation which produces such logics and philosophies also afford their criterion at least as long as the situation which generates them shall last? Schiller is avowedly willing to submit his own theories to continuous verification or revision as the situation changes (footnote p. 338). He recognizes that "frequency of tevaluation marks the progressiveness of a subject of inquiry" (p. 48).

The significant point is that these philosophies of selection have developed in an era of plenty-to-select. In human experience to which a bio-logician must be devoted there are at present self-evident ends instead of self-evident premises. Not all ends are self-evident, but the challenge which has brought forth these selective tributed joys-here-and-now;—or in Cartesian terminology, the and increasing opportunities for human excellence in any opportunities for human excellence in any opportunities for human excellence in any opportunities to launch a new modernism in a bio-logic of opportunity as new modernism in a bio-logic of opportunity as

struggle for certainty in keeping with the times which launched the old modernism of 1650 to 1900.

ELEANOR BISBEE

University of Cincinnati.

L'Idée de Bonté Naturelle chez J.-J. Rousseau. S. Moreau-Rende, Paris: Marcel Rivière. 1929. Pp. 337.

The author's aim is to determine which is correct: Rousseau's fundamental idea that man is naturally good, or the Catholic and traditional view which "evaluates human nature without deifying it" and knows how to find "in its repentance and avowed weakness a source of beauty." The author's conclusion is that Rousseau's "foolish belief in natural goodness, a theory not supported by facts, has succeeded only in disorganizing thought, enervating pedagogy, disturbing the social edifice, obscuring faith, in short, in compromising in all domains the fruits of long centuries of civilization." This conclusion is reached only after a very painstaking and detailed presentation, first, of the influences on Rousseau's mental development, which gave him the idea that "a world of chimeras is the only one worth inhabiting," second, of the substance of his various writings in which "the thesis of natural goodness is presented to gether with its logical consequences of a return to nature, an individualistic religion, a contempt for society and for all authority in general, and a negative education"—although careful note is taken of Rousseau's De l'économie politique in which his fundamental idea does not appear—and, third, a critical evaluation of his work. The fourth part of the book is a concisely stated conclusion of the

In critically evaluating Rousseau's thought, M. Moreau-Rendu shows that the theory of natural goodness results from "an extraordinary confusion" of a metaphysical concept, the concept of a primitive state, and the concept of "the individuality of each man, who finds himself in a restored state of nature." Moreover, the author cites confirmation of the doctrine of original sin in philosophy, does not understand Rousseau's blindness to "the unconscious avowal of the centuries and our own homesickness for a lost paradise." Furthermore, the author clearly shows weaknesses in the logic of Rousseau's thought. Though Rousseau rejects the doctrine of original sin, he does not account for the presence of evil in a society of men by nature good. Also, in his Deuxième discours, based on an event of capital importance in his life, Rousseau indicates that primitive man is neither good nor evil, that men are evil as sad ex-

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perience proves, and yet concludes that he has demonstrated man's perience proves. Again, Rousseau confesses in various writings natural goodness. Again, Rousseau confesses in various writings that the "man of nature" is only an hypothesis—though he sometimes identifies himself with the "man of nature"—and the "state times identifies himself with the "man of nature"—and the "state times identifies himself with the golden age. However, M. of nature" is no more realizable than the golden age. However, M. Moreau-Rendu points out, quite justly, that there are fragments of the inthin Rousseau's writings. But, for the most part, the author regards as evil "the profound and incalculable consequences of the movement which Rousseau has created." These M. Moreau-Rendu indicates in detail.

One finishes the book with a renewed conviction that there are two points that should not be overlooked in any evaluation of Rousseau. In the first place, as the author makes clear, Rousseau was a child of his time, for optimism concerning human nature was in the air. Otherwise, we feel sure, even his "bewitching language" could not have made his ideas prevail. Secondly, his public should have read his works more carefully, or not at all; then they could have seen the weaknesses of his view revealed in his inconsistencies—admitted by Rousseau—and in his failure adequately to establish the plausibility of that view. Rousseau's own works are the best critique of his fundamental idea.

MARJORIE S. HARRIS.

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#### NOTES AND NEWS

We reprint the following from the Cornell Alumni News of May 29, 1930:

"Dean William Alexander Hammond will retire at the close of the present college year, completing thirty-nine years of service to the University.

"His colleagues and graduate students in the Sage School of Philosophy were hosts to him May 17 at a dinner in Willard Straight Hall.

"Dean Hammond came to Cornell in 1891 as an instructor in Greek philosophy. A year later he was appointed assistant professor of ancient and medieval philosophy. In 1903 he was named assistant professor of ancient and medieval philosophy and aesthetics. Since 1908 Dean Hammond has been Sage Professor of Ancient Philosophy and of Aesthetics. He was appointed dean of the University Faculty in 1920. He had formerly served, in 1903, as secretary of the Faculty.

"He studied at Harvard where he took his A.B. degree in 1885. The M.A. degree was conferred on him by King's College, Canada, in 1887. For three years he was a lecturer there on the classics. He went abroad to study at the University of Leipsic, where he was granted the Ph.D. degree in 1891. In 1907–08 he was special lecturer in philosophy at the University of Pennsylvania.

"Dean Hammond is co-editor of The Philosophical Review and is a member of the American Philosophical Association, the American Council of Learned Societies, and Kappa Alpha. He is the author, with the late Professor Charles E. Bennett, of The Charchology, 1902. He has also contributed to the Harvard Classical "At a contribut

"At a dinner given in his honor Professor Frank Thilly was George L. Burr, '81, who recalled the organization of the Sage School

of Philosophy by President Schurman in 1891. Dean Hammond recalled the history of the School and pointed to the prominence of its graduates in the field of philosophy.

"Commenting on Dean Hammond's forthcoming retirement, The

Sun said editorially:

"" 'With the close of the present semester, Dean William A. Ham. mond will have brought to a close a long and distinguished period of active service to the University.

"'There is no need of going into a detailed account of Dean Hammond's record as scholar and teacher. He is too well known for that. Suffice it to say that few men have gone farther in their field than has the present Dean of the University Faculty.

"Men who are so keenly interested in life, so vitally concerned with things about them, so alive to the interests of students and faculty members, are indeed rare. No longer an active member of the Faculty, the dean will always be loved, esteemed, and admired by those who know him.""

The three divisions of the American Philosophical Association will meet at the University of California, Berkeley, California, December 29-31, 1930. At this joint meeting, the third series of lectures on the Carus Foundation will be given, by Professor George H. Mead. In addition to the Carus lectures, the presidential addresses will be given, and there will be sessions for the reading and discussion of papers presented by members of the Association Members wishing to offer papers are requested to send an abstract or brief outline to Professor W. R. Dennes, Department of Philosophy, University of California, before the first of November.

Enquiries concerning railroad rates and rooms should also be

sent to Professor Dennes.

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## THE JOURNAL OF PHILOSOPHY

### HUMAN NATURE AND SOCIAL ECONOMY. I

COMETHING more than a decade ago the waters of economic theory were agitated by the rising of new springs. The human hart had suddenly, it seemed, been rediscovered. The disturbance the greater for having arisen at a time when another movement The decline of authority from the classic period had made way for fresh research. In a thousand places the authority of law had weakened and hardheaded exploration with new attitudes and new tools was well begun. The attitude was a healthy wonder oncerning the meaning and relation of facts; the new tools were satistical. To the new view whole fields of economic affairs seemed be still unbroken in spite of some hundred and fifty years of prolassionalism; and the new generation had set to work to measure exactly such phenomena as channels of trade, movements of price, excretions of income, cycles, production. It can not be said with any precision what caused this movement; it is obvious, however, that there was then the concatenation of several possibly effective forces. The old laws had grown more obviously inadequate to explain much was puzzling; the new tools were preparing in allied fields biably science properly so-called—and were having results; there ras a new philosophic doctrine at large.

One likely source of courage to question and to reëxplore may have been the maturing instrumentalism which, under one or another hane, was rapidly infusing American thought. It is easy to see how bis may have been so. For a part of instrumentalism is experiment and trust in its results; another part is the feeling that things are is they never were before; and still another that nothing in itself is ther acceptable or final, but that the judgment of what is good is a tentative to be redefined as a multitude of flowing impulses conlerge to change it or to alter the acceptability of its results. This is a doctrine which is subtly subversive of any doctrine at all, even of the doctrine which is subtly subversive of any doctrine at all, even of the down into method. tistif as doctrine; for pondering upon it breaks it down into method. his not a faith to hold to, but merely a procedure; and its chief taching is that there is no stopping place but fact and that few facts but for long. Survive for long. The immense reënforcement to this attitude which his accrued from physical science in later years need hardly be physical science in later years need hardly be binted from physical science in later years need nate, and which had supply laws which had been held as incorruptible, and which had supplied the faith for lesser ones, were smashed beyond

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repair. With gravity and atomic structure abandoned as ultimated the "laws" of economics, much less firmly grounded in demonstration, became suspect too.

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The old economics could not continue to obtain approval in a intellectual environment which supplied access, in one way or at other, to the instrumental attitude; and it was to the collecting and measuring of information that economists turned. This may seen strange. Why, for instance, should they not have turned to the solution of problems? For surely there are enough and of a sort h which answers are urgently wanted. This is a question to which again, there is no certain or easy answer. It may be suggested that learning all about something is a possible task to which one may turn even in the midst of confusion. If it be pointed out that it is a task which is essentially historical and that economics, for a decade now, has been busily building up a literature which deserves no more than to be set down as highly specialized historical research, there is no effective rejoinder which can be made. It is true. The instance of scientific conception, the pursuit of relevant causes, isolation weighing, testing, in contemporary economics are few and far between One defense, perhaps, is that all this work is elementary exploration, that we are merely, after years of unprofitable effort, beginning to look freshly and unprejudicedly at the phenomena of economics. It is said that, to do this, the material must be approached entirely without bias, must, indeed, merely be revealed. This may be an idealization which has little or no reference to the manner in which intellectual work is done; but one frequently hears it recounted as explanation and defense.

With this procedure fairly settled and accepted, and with wide factual exploration under way, there came, then, about a decade and-a-half ago, a sudden furor over the psychological assumptions of economics.

There had, for a long time, been a widening breach here which finally had grown scandalous. The psychologists had pursued adventures into human nature which cast new doubt upon the whole sale assumptions of simple and rational self-interest which lay at the foundation of classical economics. The new adventures in economics were, so far, of a sort which could ignore assumptions from other fields, such as psychology, because they were merely descriptive, in statistical terms, of certain social events such as annual production the movements of prices, or levels of income. The time, however, was fast approaching when more would be necessary. Prediction being demanded; and for this there were needed working theories of causal relations. There were great changes taking place in industry, the efficiency movement was gathering momentum. It was not considered the production of the efficiency movement was gathering momentum.

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pough to measure results in goods. The human effects were insistantly troubling. Further, changes in consumption were not sufficiently treated in the mere recording of them; their human significance could not be neglected. In these, and in many other specific ance could not be neglected problems presented themselves for underfields, a range of forces and problems presented themselves for underfields, a range of the concerning the adequacy of current economic standing. Uneasiness concerning the adequacy of current economic investigation infected many of its practitioners, even, who were wholly persuaded of the need for new methods and who were entitled in the new type of research.

Some economists, after surveying what psychological literature TAS available, felt that that science was insufficiently developed to be tant on. The economists, they said, would need to wait until psythology had advanced a good deal further before its conclusions could be trusted; especially its various schools would have to settle among themselves some fatal quarrels. Some others among the economists took, almost from the first, an interesting line of approach. conomist, it was said, in investigating the behavior of groups faced with choices of goods or jobs, with the necessity of creating new standards of living, or with the new techniques of industry, was preparing the indispensable materials for a social psychology. And it "social psychology" which was needed. For this, the tools and procedures of the new economics were of a useful sort. The econwist could proceed with his descriptive efforts, confident that when le had gone far enough, his descriptions would be found to contain of only the materials for a scientific economics, but for an exploration of group behavior as well.

There was, however, still a third group. These, in exploring the literature of psychology, were impressed by two general theories which seemed, at first, anyway, to throw a great new light on the Tysteries of the human mind and to offer an adequate basis for a rebeginning in economics from a basically new angle. If, instead of beginning with complex results and collating them, the human with complex results and committee, the character of the logical place. Groups are made up of individuals, choice is an individual matter, prices are filtered through individual minds. and most important thing to know, they said, is this mind. here two theories were offered which seemed to carry a long to toward the offered which seemed to carry a long of these was Predianism. 41 Predianism. 42 Predianism. 43 Predianism. 42 Predia Predianism; the explanation which was needed. One of the instincts. But the bould easily be other was the theory of the instincts. But the by could easily be merged in one. The work of Freud and his folthat of several description of the single exploration: that of sex. It contributed more than that single exploration: it for instance, had as its chief postulate a hitherto only suspected But none of its generalizations were antithetical to the theory of instincts. For this doctrine held that human nature is properly described as a bundle of innate tendencies to action, over laid, of course, by environmental modifications, but rather simply classifiable, and, because primitive and elementary, susceptible of rigorous analysis. It did not deny consciousness; it was even to be reconciled with most of the older associational psychology. And it seemed to present an explanation of many phenomena which, until then, had been utterly mysterious to social scientists. It is no wonder that its acceptance was immediate and wide once the literary task of putting the theory together had been successfully completed by McDougall.<sup>1</sup>

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When the structure of classical economic theory was designed, psychology as a field of independent research can hardly be said to have existed. There were certain necessary assumptions about human meture, but these were of a sort which had no more to recommend them than that they were drawn from the prevalent philosophical atmosphere of the time. Their embodiment in particular works came at the result of excognitation rather than investigation. One man's psychology was as good as another's since everyone was free to generalize his own nature.<sup>2</sup>

Yet there were not many differences of opinion; and gradually there grew up a customary set of assumptions. Excogitation, even, in the neo-classicists, was not actively resorted to, partly because it was seen that a rather elaborate superstructure depended upon m vital change in the theory of motives, and partly because of neglect to explore the new learning which the psychologists were discovering The old assumptions were merely accepted. Marshall and Clark, in their generation, seem to have been completely anæsthetic to William James, for instance. But the generations which have followed have been, during their collegiate years, made aware of psychology. The have learned that excogitation concerning the human mind is at less as dangerous as dangerous as a similar treatment of the interest rate. And there has been a growing impatience with the cavalier treatment older economists still accord the study of human nature, together will some amusement over the naïve conclusions which still seem, to some older minds, sufficient.

Yet these new economists themselves have not always seen any

it should have been his book rather than that of William James, decades earlied, which caused these disturbances in allied fields such as economics. James was too early to find a prepared audience; and yet his book was always in print, was still used as a text; and was certainly far superior as an interpretable.

<sup>&</sup>lt;sup>2</sup> The remark that Adam Smith evidently thought there was a Scottimus under everyone's vest was a profoundly critical epigram.

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dear and usable psychological premises, nor have they found in psyelear and usable rechological literature the basis for the fresh approach they wanted. there was a time when they thought they had it. And this was There was a not McDougall's version of the instinct theory broke upon the American intellectual horizon. boke upon the support in valid experimentation. Original tendgeneral to act in fixed ways could be sorted out of the multifarious content of everyday behavior. And these tendencies could be grouped into relatively few categories which were conceived as the elements of human nature. Animals, children, even adults—with some forcing of situation—could be seen in the laboratory to act as they would act if these elements were accepted as ultimate. Furthermore the brilliant and painstaking work of Freud and his colleagues gemed to establish something even more conclusive. If sex were thought of as elemental—one of the instincts—many at least of the functional disorders of men and women could be relieved by the derivative therapy. If sex were not elemental, it could be argued, cures could not happen.

It was easy for the economist to accept this general theory of elements. It was not greatly different in its content or in the method it involved from familiar procedures in his own field and in others for which his traditional respect had never wholly failed. There had for a long time been an acceptance of elements as the basis for procedure in physics and chemistry; and the results of these sciences were astonishingly fruitful in a practical way—which always appeals to one with a social interest. But equally important, perlaps, it followed generally the "one thing at a time" method which and gained enormous prestige in the delicate and convincing hands of Marshall and Clark. "Other things being equal," was an everyday phrase to a teacher from classical or neo-classical texts. Manipul of reasoning which held all else in suspense for the sake of Manipulating reflectively one force after another, finally achieving abalanced synthesis, was in an entirely good tradition. True, there had been a growing controversy about "dynamics" and "statics," which the focal point of attack was the validity of reasoning from Suspense to action. But such questions of purely theoretical import had never been thoroughly ventilated because of the separation, in tonomics, of theory and practice. This was a curious situation (it persists) theory and practice. persists to a certain extent) in which the opportunity for academic activity. denic activity kept alive ideas which might easily have been strangled in the World of in the World of events. For one could teach anything to passive students provided he talked or wrote sensibly about worldly affairs. But all economists, nearly, were, among other things, teachers; as they had a certain reverence for the great tradition in which

they worked; and they felt quite rightly that no grander edifice of thought had ever been entrusted to human guardianship than the body of classical theory. This admiration was easily transferred to a similar enterprise in another field of which, at times, they felt the need. For it could not be denied that the economic scene was displaying pyrotechnics undreamed of in the books of the masters, Prosperity came on apace; machines were setting the dominant note of culture; human nature showed disconcerting aberrations under the stresses of change; old bonds were loosened, new pressures bore down tragically hard. Wars developed holocaustal economic features. Wages and standards rose. Social legislation involved none of the predicted catastrophes. Population obviously did not outru the food supply. No one could escape certain lessons from all this. Especially the great cooperative effort of the war gave the Anglo-Saxon world its first taste of collectivism on the grand scale. With a release of energies from the jealousy of class feeling and with capital freed from the restrictions of individual enterprise, the race showed itself capable of stupendous deeds. Where did all these new impulses originate? Was there some great secret in the organization of affairs which economists had entirely missed?

The rediscovery of human nature coincided with events. Some thing was needed and the theory which was ready to hand seemed as well-prepared by long gestation as Darwinism had seemed in its time. Since the 'nineties Wundt, James, and various others had been at work. Münsterberg, Prince, Dewey, all were discovered to have a common meaning. Cannon and Pavlov had achieved certain generalizations. All these various streams of vigorous thought could be simplified and compressed to the uses of the economist. The human body was a machine set to operate in certain ways. In the achieving of certain goals toward which these determined impulses persisted in flowing there was a pleasure which was nature's reward. In failing to achieve there was pain, frustration, and mental disorder. Modifications could be had at a certain cost. Sublimation was invented, it was a large of the cost. vented; it needed to be, for primitive action in a real world was obviously upsecial. viously unsocial. Furthermore, the reflex could be conditioned, and was, which supplied a realistic basis for the somewhat mystic notions of the Francisco of the Freudians concerning the unconscious, the censor, the stream of consciousness, and the integrated personality.

It is easy to see how, out of the brilliant mélange of new ideas, not only new ethical generalizations, but also the method for a new economics, could arise. If, as a matter of individual behavior, what was good and what was bad shifted so that there was implied almost a reversal of traditional morality, also there arose a notion of industry as one social mode of functioning, to be devoted henceforth to new

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Industry ought perhaps to supply the world with goods, but important, it ought to supply its workers with a good life important, it ceased to be a matter of urgency whether after the new pattern. It ceased to be a matter of urgency whether individual enterprises were protected in their rights; what was more important was the efficiency with which the organization fulfilled its social functions. Furthermore, its goods were to be thought of in new ways—as the instruments of instinct exercise, or, in a leter and less crude stage of the conception, as mechanisms for conditioning the reflexes of the individuals who used them.<sup>3</sup>

If the remaking of economic theory could have been done overnight many, perhaps most, of its practitioners would have wanted to begin at this point with these ideas and rebuild its structure. it was, time and the practical affairs of war intervened and not much was accomplished. It remains to be said, however, that there were those with different notions who felt that this was perhaps a mistaken starting point. Their break with classicism was further back; the new ideas of human nature failed to startle them greatly. Perhaps the core of their dissent and the starting place of reworking lay in a fundamental disbelief in the "one thing at a time" procedure. They believed in facts, but social facts. They conceived the world & a complex, actually-going mechanism, which had never been understood because both the tools for work and the impulse to genuine analysis had been smothered in the velvety folds of classicism. thing at a time was not good enough, because no one knew the important things to choose as well as because other things never remained equal. The world moved, shifted; it was disconcerting preesely because it was asked to stand still. The impulse was certainly a bold and courageous one which led certain pioneers to accept its complexity and its flux as the very subject-matter of their study. Courage was required also to persist in social orientation when there at least an impressive shift toward individual analysis. One of them, at least, said at a time when almost no one knew what he meant, that the materials of the psychology which would be useful to econ-Omists, were yet to be discovered, and that this was work which the conomist would have to do for himself.

The group of economists who felt this way about the contribution to economics which might come from the exploration of individual any serious attempt to understand what it was all about, the new cause its champions seemed to older and harder heads a bit over-

\*Some ironical comment might be made upon the uses to which this new turned by professional advertisers who were quite as quick as shows their acceptance of Freud.

enthusiastic and over-ready to generalize. There was some recrime enthusiastic and over-ready to get in at the proponents of preliminary psychological exploration ination. If the proponents of preliminary psychological exploration among the recesses of human nature poked fun at the naïveté of the jibes among which youth, ingratitude, and brashness could be dis tinguished. It can now be seen, perhaps, that both had reason. The old tradition was dead on its feet. The new psychological approach was, at best, half-baked. Perhaps the wisest attitude for the time was that which rejected the current kind of individual approach and went out into the factories and market places with the new tools of their measuring craft, confident that a knowledge of human nature in its social manifestations, would be added unto them. If what they learned there was less than they hoped, something of importance was certainly accomplished.

It remains to be said that there were some results at least from this early individual attack. It failed to furnish the basis for the dominant economic method in the next decade; but it did have repercussions in special fields. The quality of work in the contemporary mode was one problem thrown into clear relief, and fatigue and strain began to be understood. There were others. levels of living, the family and its adjustments, wages and other incomes, the uses of leisure—all these problems, though not new, at quired a new emphasis and orientation. The coming method of approach may not have turned out to be by way of individual analysis, but not for a long time again would the individual be neglected as he had been in the past. He hitherto had had a puppet-like representation scarcely recognizable as human; he had at last come alive in economics. His welfare had become a desirable test of accuracy in theory as well as the end of economic policy. Just here there grew up a minor controversy which also had an importance in forcing a statement of aims. The group which accepted the complex of events as the starting point for analysis might seem, at first glance, to neglect the individual, to put social mechanics above welfare. They were peculiarly open to this criticism because of preoccupation with indexes of measurement in which the individual was seemingly quite as lost in class and in the individual was seemingly quite as lost in abstraction as he had been in his classic representation. Their defense, so far as they made any, took the form of protest that even for the individual even for the individual, his social relations are the most important determinants of health determinants of health, prosperity, and happiness, and that unless these are understood the prosperity, and happiness, and that unless these are understood the prosperity are the most interest the most interest to be a second to the prosperity and happiness. these are understood the individual must remain a helpless wanders' in a waste of factor. in a waste of factories, machines, and market places. The end waste individual welfare, but machines, and market places. individual welfare, but one does not necessarily begin where one hopes to end, especially to no does not necessarily begin to nromise. hopes to end, especially if that method seems, on its face, to promise sterility. To study wells sterility. To study welfare is possibly to neglect the sources of

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Thus justified to their own satisfaction, they went on with the This justified on with the which by now is sufficiently well under way for some general-Tt has been spoken of above or all arrangement of facts. It has been spoken of above as allied to history; and this is true also in the sense that nearly always it attempts to establish equences or trends. It is frequently referred to as "quanguar-qualitative"; which is to distinguish it from qualitative.4 But its temporal nature is at least as significant as its handling of measured The two, in fact, march together. The sizes of the units considered must be made as comparable as the interchangeable parts of modern machines; but the significance of correlation only appears when recurrence is established. Its greatest contribution is, perhaps, that it allows us to see, with a precision which is unique in our genention, an abstract representation of what is happening. We are no longer permitted inaccurate comparisons of one time period with another. It is now possible to say exactly that this defined quantity has, during a given period, been enlarged or diminished. from this we can draw whatever conclusion we fancy; but we are permitted to imagine these facts. This is, of course, an immense advantage to the economist since it sometimes succeeds in narrowing the areas of controversy. But it ought not to be concluded, as it metimes is, that this measuring process accomplishes more than in reality it does.5

REXFORD G. TUGWELL.

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#### BOOK REVIEWS

REVIEW OF SOME RECENT GERMAN LITERATURE ON THE ESTHETIC MIND AND ESTHETIC ATTITUDE

Sart. Book Allgemeine Kunstwissenschaft. Max Dessoir. Stuttgart: Ferdinand Enke. 1923. Pp. viii + 433. Mysiem der Asthetik. Ernst Meumann. Leipzig: Quelle & Meyer.

Pp. 144.

berg: Right and Seiner Seele. WILHELM HAUSENSTEIN. Heidelberg: Richard Weissbach. 1914.

Beilger Richard Weissbach. 1914. Pp. 94.

George zur Phänomenologie des asthetischen Genusses. Moritz

1013. Pp. 118. George Phänomenologie des asthetischen George Halle a.d.S.: Max Niemeyer. 1913. Pp. 118.

Max Niemeyer. 1915. 1 p. 1916. 1916. Ap. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1916. 1 No good distinction has ever been message anything which is not quantitative. To be concluded in next issue, No. 18.

Das asthetische Bewusstsein. Johannes Volkelt. Munchen: Q. H. Beck. 1920. Pp. iv + 225.

Lebensformen. Eduard Spranger. Halle: Max Niemeyer. 1925, Pp. xvi + 450.

Dessoir discusses three theories regarding the nature of artistic creation, namely, the theory of illumination, the theory of enhance. ment, and the theory of technical comprehension. Illumination is a state of mystical vision which is unanalysable because it bears no resemblance to normal mental phenomena, and is usually explained as a power descending from on high upon some specially favored person. According to the theory of enhancement the artist is a superman with livelier imagery, stronger feeling, and far-reaching imagination. From the third point of view artistry consists in technical readiness-skillful hand, absolute pitch, etc.-industry, patience, thoughtfulness, and the gift to maintain a critical attitude towards one's intimate fancies. These theories Dessoir shows to be mutually inclusive in that each stresses one period in the process of creative unfolding. Illumination is a period of storm and stress, surge of feeling and passion that borders on physical pain, a foreboding of the birth of an art work. The composer hears faint voices, but the meaning of their speech is yet vague. But in this faint augury he catches a glimpse of a promise to be fulfilled. ess of illumination is followed by that of conception. Conception is the moment when the urge for expression and the yet indefinite content have become united, when the longing of the poet has been verbalized and the mental picture of the painter has been colored The inner images become expressionable, articulate, ripe, in the words of Croce, intuizioni espresse. It is peculiar that the activity engaged in during this period does not usually culminate in the anticipated result, but as the artist experiments with this and that the unexpected emerges. The creative process is thus haphazard but by no means without objective. If an objective were lacking no finished product could be forthcoming. The skirmishing about serves the purpose of fusing together the hitherto diverse elements. Dissociated images become a unified concept. The faggots are prepared, a spark is needed, and suddenly the full-grown drama of painting or musical painting or musical composition emerges as if by magic. But this suddenness of consecution emerges as if by magic. suddenness of conception is illusory. In reality the process was cumulative, and needed only the final impulse or touch. What the artist sees and hears artist sees and hears incidentally under ordinary conditions assumes a new significance in the a new significance in the creative mood. Daily ordinary experiences bear artistic fruits when the creative mood. bear artistic fruits when planted in the creative mind. artist himself can not tell with certainty what the outcome of his labor will be. Always there will be readily what the outcome by new labor will be. Always there is the possibility of modification by new

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When creative artists claim that their art work was coneired in its completeness at the very beginning they are mistaken. there are many pathways that deviate from the original starting There are many into an opposite idea. A modified, but may point. The got may point the transformed into an opposite idea. A new experience may intervene that disrupts the old unity and constructs a new one, or the first form may persist, but later conceptions introduce a new onient. It may also happen that anarchy enters and the work is never completed.

Conception is followed in the usual sequence by a sketch, that is, the concept becomes objectified. But, in many cases, conception first becomes ripe in the sketch. Thus the musician who seeks inspiration by wandering aimlessly over the keyboard may thereby happen upon original motifs, and while the painter is playing with sketches he may be laying up treasures in heaven. The sketch stimulates the creative power. When the subjectively presented and the objecfively represented approach each other, the fire of execution burns with a brighter flame. The painter conquers his goddess by painting Creation is dependent upon rendition. Thought becomes crystallized by writing or speaking. There is no "Raphael without hands."

The substance of the creative mind Dessoir finds in the will to create forms or the will to expression. A genius is a person whose life is actuated, in the words of Bergson, by "un élan, une initiative, me effort pour faire produire à la matière quelque chose que, d'elle même elle ne produirait pas." Genius is possessed of an overwhelming inner power. It is mentally pitched, so to speak, an octave above other persons. Ordinary scientific and artistic work plods along slowly and surely in a single direction, but the work of genius tri-dimensional, drawing strength from left and right, and radiating above and below. Genius has the power to appropriate organize in the highest degree whatever flows in its direction. It possesses a certain comprehensiveness of consciousness, an allinclusive presence of mind, in that it commands a range of experience and in the non-essential rience and is able to differentiate the essential from the non-essential with a certainty that is beyond the ordinary person. Above all, thius has primitiveness, originality. Its creations are rooted in lature and lie parture from all while talent either imitates or takes its point of departure from older masters. Genius whirs about like a bird, seizes a crumb out of the abundance of life, and hurries with it into the quiet nest, to consume it at leisure. A work of art, the least as well best is the best in the least as well as the best is the best in the least as well as the best is the best in the least as well as the best is the best in the least as well as the best is the best in the least as well as the best is the best in the least as well as the best is the best in the least as well as the best is the best in the least as well as the best is the best in the best in the best is the best in as the best, to consume it at leisure. A work of art, the reason of its thus a reflection of the unique personality of its represents an inteereator. It is, in truth, a personality, since it represents an integration of direction of dire Ration of diverse elements. It is a microcosm, and approaches the macrocosm of that divine personality which is, according to part theism, the all-embracing substance. A work of art is divine in that it is as comprehensive as the universe, and yet remains personal that it is as comprehensive is its pathological nature.

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Another trait of genius is its pathological nature. Everything great has its origin in pathological manifestations, and is therefore taken to be pathological. The pregnant woman, if she were up aware of her condition, would consider every one of her symptoms as a serious ailment. But these symptoms mean the birth of a child Likewise the development of mental children involves a disturbance of the normal state, emotional disturbances, disturbances of the nervous system, which do not disappear until the idea is born. He who would renounce artistic or scientific creativeness for the sake of health is like the child who would rather have no teeth than undergo the pain of teething, and he who would designate higher mental activity as abnormal must likewise designate teeth as a disease, since teething is accompanied by pain and fever. And, since the productive person will not cease to think and create, he will not cease to suffer. The autobiographies of our great men speak a very distinct language. It is no exaggeration to speak of health as being an evil It is certainly not an unconditioned good, and it is demonstrable that suffering and pain are essential companions of spiritual growth The conclusion is therefore apparent. The average man, or James' "tough-minded," desires health above all, while to the creative minded, bodily health is the least essential. The body is not to stand in the way of fruitful mental work. Mind does not soar when hemmed in by anxiety over every disturbance of bodily well-being The psychopathologies of mental workers could be avoided if these workers would accept medical advice and cease their labors. The customary prescription of the moralist, "banish disease, need, and misery from the world, and you do well," is unpleasantly naive In the suffering of the mother man is born, and he is reborn in his own suffering. The world's work is done by its invalids.

A third trait of the creative mind is solitariness. All true artists are solitary, since their restless superabundance and their mental suffering separate them from the satisfied crowd. The significance of their existence lies in their work. The best that they have to give they do not bestow upon their neighbors or family, but upon their fellowmen and posterity. It is noteworthy that genius is little affected by contemporary occurrences that overwhelm the majority. The self that functions in the work of art is not a social self. The artist as such does not emanate from our ordinary world, and therefore he asks of life nothing but peace to continue his work. It is not a super-personal world loses the ability to adjust himself.

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the demands of the day, natural or social. Artistry and husbandry are natural, necessary antagonists.

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Meumann presents a critical summary of current studies on the Meumann presents a critical summary of current studies on the nature of the creative mind and offers a theory of his own. He analyzes creative activity into three factors: (1) the motives of the activity; (2) the steps in the creative process; (3) the skills that function in artistry as a whole and in the individual arts in particular.

According to Meumann every true art work is a product of an expression motive and a work motive. The expression motive arises from an intensely gripping esthetic experience creating a drive to express the experience, while the work motive leads the artist to give his experience the form of a permanent art work.

We have it on the testimony of artists that some object which arouses a vivid emotional and imaginative response is the source of creative activity. This motive may also be supplied by some abstract artistic idea or an artistic problem. In single instances the significance of this experience may appear under various guises. It may excite immediate creation, or it may become effective after an interval of time has elapsed, or it may even be temporarily forgotten and brought back to consciousness by some other experience, when it becomes creatively significant. Often the urge to creation is aroused by another work of art. At times the creative impulse is found during the period of execution, and it is typical of many artists that the concrete form for the embodiment of their ideas first comes to them in the process of execution. However, that does not alter the fact that an interesting and meaningful perception is the elemental and primary motive of artistic creation.

But more significant for an understanding of artistry as such is analysis of the work motive, which may also be called the motive for execution or form-giving, for while all persons are moved to give expression to feeling, only the artist feels the need to give his expression a permanent artistic form. This motive characterizes all art to such an extent that it may be considered as the unconditional definition of artistry. The mere expressive urge is formless and planless, but the urge for representation, on the contrary, means the choice of the choice of a definite form, a delimitation of the form that the ex-Pression is to assume. Art may, therefore, be defined as the representation in Sentation in sensuous media of an emotional experience, the repre-In sensuous media of an emotional experience, the motive that circumstated the form of a permanent work of art. It is this motive that gives rise to the problem of artistic technique, for the attist must arrive that gives rise to the problem of artistic technique, for the attist must arrive representation, attist must express his experience not by any chance representation, but in a manner that expresses adequately his feelings and the sighis amanner that expresses adequately his feelings and and wealth of his inner experience. This is attained only when the representation re-evokes the specific meaning of the experience, which can happen only when the experience is embodied in adequate form.

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The expression motive and the work motive bear a significant relationship to each other in that under certain conditions they are diametrically opposite in their influence upon art. The expression motive has wider possibilities than the work motive, so that the urge to embody experience in permanent artistic form curbs and limits the desire for expression, and vice versa, the desire for expression tends to interfere with the production of a unique art work in a strictly artistic form. It follows, therefore, that as either one or the other of these motives becomes predominant, a totally different kind of art will arise. The expression urge is formless, since it is primarily an elementary drive for expression, but the urge for representation demands a specific form. That is, so soon as the artist begins to represent his experience he is limited and bound in two ways: first, in the use of a definite material which limits the expression; and second, in that every art form has its peculiar laws that the artist must follow if he is to succeed in that particular medium. Often the whole development of an artist is determined by these conflicting motives. An example of this is Richard Wagner. In his youth he was controlled by the operatic tradition of the predominance of voice over instrument. Gradually he broke through this tradition because of inner necessity, and the instrumental superseded the vocal, since he felt that the orchestra is capable of more varied expression than the voice. Arias and melodies of the opera are more and more displaced by the recitative, which approximates spoken language, and is therefore more plastic in expression than is melody. The opera thus became a music-drama, and consequently more expressive, but also more formless. Here we have an example in the development of an artist of the predominance of the expression motion sion motive at the expense of the form-motive to attain greater expressiveness. The expression motive thus seems to have a twofold significance in art: (1) it leads to the disruption and destruction of strict forms for the sake of uncurbed expression; and (2) it is at the same time. the same time a positive creative motive in that it drives the artist to enlarge the expressive medium of his art, which may result in the abandonment of old forms and the invention of new forms that give expression wider scope. The expression motive is thus the father of all forms and leaves of all forms and laws of technique, and a reforming, broadening, creative principle. not to destroy its fraits in technique, and a reforming, order not to destroy its fraits in order not to destroy its fruitful tendency in art development, while the form motive is a conservative element in art, and as such exerts a retarding influence if retarding influence if permitted to become one-sided and have full sway.

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Hausenstein enumerates four attitudes toward the world, active, Hausenson and contemplative. In the active, speculative, entitudes, either practical intellect. speculative, active, speculative, either practical, intellectual, or transcendenand emotive tions intervene between subject and object. In the contal constitute nothing is present but pure form, the thing in templative at the attitude of the artist. He observes the world minus idea and minus will. He experiences objects in a state of pure perception. To him the world is an appearance with which he becomes identified. He has no desire to understand, only to experience directly and immediately. The world presents itself to him as a relationship of motions, vital energies, sounds and lights. And these he does not desire to explain, only to experience, to have them enter into him and he into them. In this respect his mind is superficial, but in another sense it is profound. This naked outer world can stir in him great depths of feeling of which the nonesthetic mind knows naught. It can stir him more deeply than any scientific discovery, political sensation, industrial upheaval, or social disaster. It is the special endowment of the creative mind to encounter form in everything within experience. Form is impressive, affective appearance. Whenever space, or color, or line becomes significant, form is experienced. Esthetic contemplation then means not simply visual experience, seeing with the eye, but mental experience, seeing with the mind. But mental experience not in the sense of knowledge, but as a vision, a sensing in the actual present of a potential ideal. It is the vision which constitutes the creative urge, the desire to present the ideal through the actual. The artist is nervous, restless, impatient, due to the driving power of the vision of a mystical otherworld which he seeks to objectify in a work of

Geiger presents us with a careful study of the nature of esthetic enjoyment, which he treats as a special form of enjoyment in general.

Enjoyment belongs to the life of desire, but all desire is not enjoyment. When I am relieved of a pressing duty the feeling I experience is satisfaction of desire, but not one of enjoyment. Again, my joy on seeing a friend whom I wanted to see is a satisfaction of a desire, which is quite different from the enjoyment I experience from a theatrical performance. Both enjoyment and desire have an objective reference: I enjoy a melody and rejoice over the arrival of a friend. But there is a difference. The joy because I like him. But enjoyment knows naught, beyond its impediate object, or something that motivates it. In enjoyment, the relevant question concerns its basis and its cause, but not its

motive. Enjoyment is a motive-less experience, while desire is motive-full. But because enjoyment is motive-less does not mean that it is baseless or groundless. Thus my enjoyment of a certain wine has its basis in its mildness, and my enjoyment of a picture lies in its composition, coloring, content, or drawing. But the ground for the enjoyment lies within the object of feeling itself, while in motivated experiences it lies outside the object.

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The enjoyment of art is motiveless—its cause lying nowhere outside the art object. This does not mean that there is no motive for the striving after esthetic enjoyment. Thus catharsis, esthetic repose, escape from daily routine, self-forgetfulness, are all motives for the striving for art, but they are not the motive for the enjoyment. The prevailing theory that art is play, in that both are ends in themselves, suffers from this confusion between the motive for enjoyment and the motive for the striving after enjoyment. It is not true that play and art are ends in themselves, or that art and play cease to be such when used as means towards an end. The fact is rather that the enjoyment of play and art is its own motive, and not that art and play are ends in themselves.

This motivelessness of enjoyment holds true not only for play and art, but likewise for the enjoyment of love, rest, sport, revenge, that is, every form of enjoyment. Enjoyment, so long as it lasts, is self-sufficient. All enjoyment, whether esthetic or not, has no bearing upon the world of daily life, excepting that it may be either interrupted or destroyed by external conditions. Enjoyment comes and goes with the object of enjoyment, and the deepest esthetic enjoyment is, in this sense, an experience unique in life.

But what are the special and specific traits of esthetic enjoyment in contrast with other enjoyments? Does the difference lie only in the object or is it in the nature of the experience itself?

Esthetic enjoyment must be accepted as covering a wider field of experience than that circumscribed by objects of beauty or those possessing esthetic value. One can enjoy esthetically the taste of food without the food having any esthetic worth. The esthetic enjoyment of an esthetic object is specifically different from that of objects which in themselves are lacking in esthetic worth, but which can be esthetically enjoyed. The difference, however, is in the sphere of esthetic enjoyment itself. Geiger is concerned with the nature of esthetic enjoyment in general, inclusive of everything which can be esthetically enjoyed, whether beautiful or not.

Esthetic enjoyment is an attitude of contemplation. Contemplation is a unique attitude between subject and object. It is a passive, non-analytical, distant attitude, one in which the object is observed fully, but not speculated about. "Distancing" is an essential trait

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of contemplation, in that passivity means that the subject observes the object without penetrating into it. In this state the object can the object with state the object can be enjoyed dispassionately. When I partake of wine and enjoy its be enjoyed the and enjoy its aroma and taste, my attitude is distanced in contrast with my aroma and the when thirsty. Here we have one trait of esthetic drinking the not all enjoyments are contemplative, as, for instance, sports, when the enjoyment is in the activity, and the self is sunk in the activity. Since an object of contemplation or of enjoyment is lacking, there is no contemplation. This suggests that vision and hearing are preëminent esthetic senses since the objects of these senses are most subject to distancing. In cases of inner concentration, as in drinking the water, there is no enjoyment of object, but enjoyment of a state of being. Inner concentration therefore never yields true esthetic enjoyment, even when the object is a work of art, since the concentration is not on the unique qualities of the object, but on moods or mental processes aroused by the object. Popular enjoyment of art is mostly not esthetic enjoyment at all. It is self-enjoyment, not art enjoyment. Such enjoyment may be pseudo-esthetic, but it is not esthetic enjoyment of art. But a distinction should be drawn between inner concentration upon a feeling and inner concentration in a feeling. In the latter I am lost in the feeling, and this loss of self in the feeling, is my enjoyment of it. In the former case, on the other hand, I assume an attitude towards the feeling, which thereby becomes an object of contemplation. This concentration in a feeling is outside the esthetic realm. To use a work of art as a means of self hypnotism or intoxication is not an esthetic activity. Opium or wine would do as well. In concentration upon a feeling, however, there is some distancing, and consequently possibilities for esthetic enjoy-The principle follows therefore that where observation partakes in the widest sense of distancing there lies the realm of sthetic enjoyment, whether the observation be of objects, or of inner experiences, like moods or feelings. The enjoyment of play and sport have as little of distancing as the enjoyment of bodily feelings and sport have as little of distancing as the enjoyment of bodily feelings or loss in inner experience, and hence are not esthetic enjoyments

But there is distancing that is not esthetic. Indifferent scanning is not contemplation. Contemplation involves more than empty distancing of objects. The object must be grasped intensively even if it is distanced.

There is another important phase of esthetic enjoymen?, one that the object of enjoyment must be grasped in its fullness of color and form, as well as object. When I look at a tree I see not only

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color and form, but also the tree as object. But if I think only of the object, tree, it is not before me in its fullness, since it lacks color and form. The complete object is before me only when the sensory and perceptual elements of the experience are present. Ordinarily we say "I see a man" and not "I see the colors and forms of a man" But if we ask ourselves whether the man also gives us esthetic en joyment, whether he is beautiful or ugly, we notice that, whereas before asking this question we saw the object, man, immediately in the visual data given us, now we dwell on the sensory data and are interested in the fullness, completeness of the experience and not only in the "what" that appears in the fullness. Formerly I saw the man through the colors and forms, now I see the colors and forms, but the colors and forms of a man. Here lies the essential difference between ordinary and esthetic observation. To see a part and not the whole is not esthetic contemplation. Moral, political, and religious implications of a work of art are for this reason outside esthetic consideration.

We have, then, two traits of esthetic contemplation in distance and fullness, distance excluding one set of enjoyments from the esthetic field, namely, enjoyment of self-activity, enjoyment of acquisition, of relationship, and fullness excluding the enjoyment of an object as such. Contemplation is therefore an inner attitude towards objects, a form of perception, and not of enjoyment.

The question now arises as to the effect produced by esthetic contemplation upon enjoyment, whether it creates unique traits of enjoyment that are a linear enjoyment.

enjoyment that are lacking in other forms of enjoyment.

If we compare the enjoyment of a glass of wine when we are thirsty with its taste in pure contemplation we note that in thirst the enjoyment is more intense, passionate, but unconscious, less pointed. Object and enjoyment become fused as an experience. The enjoyment is lost in the drinking. But in esthetic enjoyment it is the enjoyment that is predominant and vivid. Esthetic enjoyment is thus conducive to enhanced living. This is due to the factor of distancing. The second factor, fullness, means that the outer layer of the world of objects fades from perception so that enjoyment is directly and immediately connected with its object. The pleasure is objectified. When observation is directed on the object itself, for instance, on the religious content of a poem, this fullness is missed, and what is grasped of the object is mediated by that which gives me the object.

A third trait of enjoyment in esthetic contemplation is that it is disinterested. Esthetic enjoyment is never conditioned upon the actual existence of an object, since such enjoyment is as possible in imaginary as in real objects. Esthetic enjoyment is thus free of

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Esthetic enjoyment, in sum, is the disinterested contemplation of the fullness of objects.

Volkelt devotes a volume to an examinattion of Einfühlung in relation to esthetics. Einfühlung is not an exclusively esthetic concept, but functions in all life situations. Again, Einfühlung does not exhaust all problems of esthetics, nor are all esthetic problems Einfühlung problems. Einfühlung bears more directly on esthetic observation and enjoyment than on artistic creation, since creation has aspects which differ essentially from Einfühlung.

Esthetics has four basic norms, each of which has an Einfühlung aspect. The first norm is that of the unity of form and content with which Einfühlung is most closely associated. In daily life Einfühlung is superficial, evanescent, incomplete, while in esthetic experience it must be of the finest, purest, all-sided penetration. observed object must appear as animated in all parts and on all sides in the highest possible degree. The fourth norm, which is the organic unity of the esthetic object, does not bear very directly on Einfühlung, only that the organization of parts presents aspects of Einfühlung. There are strivings which find an outlet in the contrasts and harmonies of organization. But the essence of organization is not Einfühlung. The second norm is completely independent in ent in origin of Einfühlung, namely, the humanly significant content to tent. Its source is not Einfühlung, but knowledge and judgment of human affairs. Although, however, Einfühlung is not its source, significant content obtains its esthetic coloring from Einfühlung. The third norm is least connected with Einfühlung, namely, the illusory character of esthetic reality. Here a transformation occurs in the role. in the relationship of our feeling to reality of the nature of an unloading, an emancipation. Einfühlung has no part in this transformation of formation since the feeling of emancipation is projected into the esthetic object, and is located in the object. In Einfühlung a certain content. tain content is imposed on the object, while here reality is transformed, translated into the illusory.

What is the relationship between the transformed reality and reality? That is, what is the nature of the esthetic mental

state that is brought about from the relationship between the concretely organized material of art and its represented content. It is apparent that stone, metal, wood, etc., are not the stuff in which represented objects have their true being. In esthetic experience the sensory qualities of the art work, such as color and space, remain unchanged. But the perceptual qualities assume a different reality character. The portrait has an essentially different reality character from the living person. It looks real, but it is not. The sensory qualities of a work of art convey the impression of a transformed reality.

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The reality of art can only be suggested and intimated. In contrast with ordinary reality, art reality is more ideal, more spiritual, subtle, soaring. A trait of art reality is thus that it never gives the impression of actual reality. It is never mistaken for actual reality, but always has the effect of being a created reality. It is the creation of the artist in its uniqueness of individuality that strikes the attention of the observer. The feelings experienced in the attitude are fused with those of the artist and his product, so that the feelings vary with the artist and the art work.

The art impression is not aerial. It is not unreal in contrast to what is ordinarily considered as real. Nor is it a delusion. The aim of art is not to delude, rather it strives to give a reality which grows out of the inner condition of art in general and some special art in particular. This unique quality of esthetic reality is not limited to art objects, but also holds for esthetic impressions obtained from natural objects.

The esthetic consciousness has thus for its characteristic trait that it manifests this transformation of reality. First for the esthetic consciousness objects exist as expressionable. The sensory object becomes the embodiment of feelings in that the feelings are objectified and belong to the sensory aspects of the object. Thus what is observed receives a unique quality of expression difficult to describe. We see not only that which is before us, but also a certain ideal element, which adheres in a non-sensory manner to the directly apprehended object. The object thus receives an enrichment of content. This quality creates a sympathetic excitation in the subject. In esthetic ject. In esthetic contemplation, in spite of the exclusion of selfconsciousness, there is the feeling that I am one with the expressive quality, that I aming the state of the expressive quality, that I swing along with it. Second, the esthetic object possesses the character of sesses the character of representation, of appearance, of immateriality. This constitutes the This constitutes the quality of transformation into the ideal, piritual. The cultivation of transformation into the ideal, the spiritual. The subjective phase of this quality is the conscious ness of the non-corner of the disirness of the non-corporeal nature of the art material and the disinterestedness of what is terestedness of what is represented by it. This consciousness is inthe content. It in which perience pace, redifferent t reality ot. The

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plicit. Only in so far as the observer deliberately takes thought of non-corporal and disinterested factors. In fact, the scious of the non-corporal and disinterested factors. In fact, the stitude is destroyed whenever the observer is explicitly conscious attitude is destroyed. The esthetic consciousness as a whole belongs of these elements. The esthetic consciousness as a whole belongs to the realm of implicit consciousness.

Spranger draws a distinction between the economic, theoretic, social, practical, religious, and esthetic egos. The esthetic self is dream-self which merges itself with objects, whether real or dream-self which merges itself with objects, whether real or maginary. This self has its habitation not only in its own body, but finds a more extensive home in the world about it. This merging is not necessarily a process of personification of nature, a reading of one's ordinary self into an object, in the sense of Lipp's Einfühlung. It is not the corporeal self that is present in objects esthetically experienced, but predominantly a psychic self. Thus, the brightness of a red in an object is not our brightness, but something brighter which radiates from the object and which blends with our self. In the esthetic state the mind imposes upon objects mental qualities, and thus expands them into a functioning dream-self within the confines of its conflict with the outer world.

Spranger summarizes the substance of the esthetic experience in the formula "formed impression-expression." By impression is meant a sensory or imaged object affectively experienced. Expression is the material presentation of the enlarged mental content of the experience. Form means the harmonious state between the objective and subjective factors, a fusion of percept and feeling. It is the province of esthetics to ascertain the border line between the object as such, and the attributes imposed upon the object by mind, which constitutes the esthetic element of the experience and out of which works of art are born. The basic nature of this experience is to be ascertained by contrasting it with those of the theoretic, economic, and religious activities.

The esthetic attitude is free of desire. It is a pure mental adventure in the manifoldness of a real or imaginative universe. The reaction to the world of realities is intense, but through the power of imagination the esthetic mind constructs a veil through which the daily contacts are sifted, so that even pain and sorrow are transformed into joy and pleasure. The esthetic experience reates a unique content for mental life. The esthetic type of persuch temperatures are since the content for mental life.

Three types of esthetic-minded persons are distinguishable. To external impressions. They are experience-hungry. They flit

lightly from impression to impression, inhaling their aroma indiscriminately. These are the impressionists. Others, again, live at intense inner-feeling life, giving all experiences their own subjective coloring. These are the clear-cut subjective natures: expressionists. But it is only when both impression and expression are thoroughly balanced that we have persons of inner form, truly plastic natures. In these persons the inner unfolding is at the same time also an accumulation of impressions, and theirs is the truly esthetic nature, to be distinguished from mere knowledge or technical skill. Their very life is an art work. They are form, beauty, harmony, as such.

What is the difference between this inner artist and the actually creative artist? The latter is at the same time more and also less than the former. He is more in that he possesses the power of materially objectifying his experience in color, tone, or poetic image. He is less since, by the very nature of his activity, he is limited to one channel of expression, as a piece of sculpture, a poem, a drama, a dance, or a song. His inner life is thus cramped, and he even harbors an insatiable thirst to express himself in one supreme work of art, in which he seldom succeeds. Most artists remain in a single limited state in which either impression or expression predominates.

The esthetic mind differs from the scientific mind, in that it retains an animistic attitude towards nature. All of organic nature appears to be dominated by an inner creative urge, actuated by an immanent purpose that appears to be of the nature of mind. It is distinguished from the economic mind, in that the beautiful and the useful are sharply distinguished. Whoever identifies the beautiful and the beautiful are sharply distinguished. ful with the useful, whether as moral or technical, pleasurable of instructive, destroys its pure essence. The esthetic mind is either indifferent or helpless when confronted by economic considerations But in another sense the esthetic person lives a balanced, economic life. Periods of enthusiasm are followed by periods of resignation. He seeks full and varied experiences and does not limit himself to intellectualizing life. But an attitude of expansion needs to be balanced by balanced by one of restraint. A stoic tendency, the Pathos of Restraint, therefore straint, therefore marks the esthetic type of person. interest of the esthetic person in his own kind is not ethical or moral but as objects of but as objects of esthetic experience. The out-and-out esthete is predominantly erotic, in the Platonic sense. The psychic relationship between the service of the psychic relationship between the psychic relations ship between the sexes, when physical sexuality does not obtrude itself, is generally eather. itself, is generally esthetic, in that completion of the self is attained by a fusion of chieft. by a fusion of object and subject. The one is incomplete without the other. But the contact the contac the other. But the content of such a union transcends the esthetic

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poment, bordering on the religious experience in its universality. The pure esthete is too much influenced by imagination in his social The pure contacts. Faithfulness and helpfulness mean nothing to him minus ontacts. For the economic phases of society he has attraction and taste. Nor does he know human beings realistically. Oscar Wilde, for instance, values socialism only as a means towards Such a condition, however, is possible only in the world of imagination created by art. In art the self attains wtrammeled realization. Only in a condition of free union is man hautiful. That is his destiny, to be beautiful. The concern of the state is the useful; that of the individual is the beautiful.

The feeling of strength that the scientist experiences in his posssion of knowledge, the esthetic person feels in the consciousness of his individuality and personality. And just as the scientist expresses this strength by his control of nature, so the artistic individual exercises his strength in the influence he exerts upon others through his creations. The esthetic person is an aristocrat and individualist. He withdraws from people and becomes self-sufficient so soon as the province of his personality is trespassed upon by others. When the esthetic person fails to maintain this reserve and becomes entangled in matters of state, it is an indication that he has no "sense" for the exclusiveness of his realm. Even the state the esthetic person considers, esthetically. Under favorable conditions the state is a form, under unfavorable conditions a fetter. Therefore he is a liberal who would limit the authority of the state, or even an anarchist who holds the state as superfluous. He wishes to live in keeping with the inner law of his own nature. He needs for growth and self-unfoldment, and finds freedom only in an organic development from inside out. He is therefore inclined towards the liberalism of an esthetic social order rather than one ruled by a Kantian categorical imperative. He dreams, as did Hyperion, of a theocracy of beauty.

In theology the esthetic mind has no interest; it has a religion of beauty. The world represents unity and variety, God is a creative the world represents unity and variety, don't religious that is to be universe a harmony and a sea of beauty. The religious state is to be identified with this harmony; blends with it. In its cosmology the esthetic mind is thus preëminently platonic. ligion is the esthetic mind is thus preëmmently place the love of beauty. Beauty is holiness. Thus beauty becomes a most mere shadow, blusion, but it is not mere shadow, thision, but the substance of reality, the underlying kernel of raw, the substance of reality, the underlying kernel of raw, buformed, ugly appearances. Even suffering, death, and sickness elothed in appearances. Even suffering, death, and sickness wilde called Christ the are clothed in poetic garb. Even suffering, death, and the esthetician of the esthetician of the soul.

The Will to form is thus the essential trait of the esthetic mind.

It is actuated by an urge to objectify the imaginative self. Its objection, self-gratification, jective is self-realization, self-completion, self-gratification. MAX SCHOEN.

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Immanuel Kant's Critique of Pure Reason. Translated by NORMAN Кемр Sмітн. London: Macmillan and Co., Ltd. 1929. xiii+ 681 pp.

All English-speaking students of Kant will be profoundly grate. ful that so distinguished a Kantian scholar as Professor Kemp Smith should have undertaken, and achieved so successfully, the arduous task of a fresh translation of Kant's Critique of Pure Reason. The older translations, those of Meiklejohn and Max Müller, leave much to be desired. As Professor Kemp Smith remarks in his Preface, "both Meiklejohn and Max Müller laboured under the disadvantage of not having made any very thorough study of the Critical Philos ophy." Meiklejohn's translation had the great merit of being in a clear and flowing English; its chief defects were that accuracy was often sacrificed to literary style and that only the second-edition version of the Critique was translated, the first edition variants be ing wholly ignored. Max Müller improved on Meiklejohn by adding in the form of supplements, a translation of the passages in the second edition which constituted additions to, or alterations from, the first edition. He also strove for greater accuracy by keeping more closely to the original text. But the resulting style was unfortunate; the reader was never allowed to forget that he was reading a translation, and was often led to attribute to Kant a far more labored and clumsy mode of expression than was really just. No was Max Müller ideally accurate, as, to cite a single instance, in his translation of Erscheinungen as "phenomena" instead of "appear ances."

Professor Kemp Smith has succeeded admirably in overcoming the weaknesses of his predecessors, and his translation will weaknesses of his predecessors, and his translation will weaknesses of the doubtedly be accepted as the definitive English rendering of the Critique. To begin with, the smoothness of the translation is it itself a notable achievement, best appreciated by comparing professor Kemp Smith's English with that of most other translators of Kant's writings Kant's writings, or studying the original German with an eye to the translator's problem. the translator's problems. In the second place, the translation for responds with remaining the original German with an expension of the free responds to th responds with remarkable closeness to the text. Indeed, the frequency with which the quency with which the structure of a long and involved German sentence has been preserved without loss of clarity or lapse into awkward English is worth awkward English is worthy of special comment and congratulation On occasion, of course, the difference between the German and the

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Inglish idiom has necessitated a resort to paraphrase, as for in-Figlish lation 43, where the term Erkenntnisse is translated "modes stand on p. 43, where the term Erkenntnisse is translated "modes on p. 44, where the term Erkenntnisse is translated "modes on p. 44, which is the term Erkenntnisse is translated "modes on p. 44, which is the term Erkenntnisse is translated "modes on p. 44, which is stance on p. 10, our word "knowledge" lacking a plural form. But of knowledge, a plural form. But even in such cases the translator has faithfully indicated in a footof the "liberty" which he has taken. A third characteristic of the translation calls for somewhat more detailed comment. It is clear that Professor Kemp Smith has always aimed at giving the English reader an intelligible account of Kant's thought and has not been content merely to translate with mechanical precision the succession of words and phrases. Now this endeavor is frought with unusual difficulties in the case of Kant, for Kant's sentences are habitually long, often inexcusably involved, and occasionally even grammatically faulty. In addition to this, however, the translator himself calls attention, in his Preface, to another type of problem which offers an even greater difficulty. "There are sentences," he writes, "which, to judge by their irregular structure and by the character of their constituents, must have owed their origin to the combination of passages independently written and later combined. . . . [Kant] had, it would seem, in collating different statements of the same argument, inserted clauses into sentences that were by no means suited for their reception. In such cases I have not attempted to translate the sentences just as they stand. Were the irregularities retained, they would hinder, not aid, the reader in the understanding of Kant's argument. The reader would not, indeed, be able to distinguish between them and possible faultiness in the translator's English. Nor would it be practicable to retain them, with the addition of explanatory notes; the notes would have to be too numerous, and would be concerned with quite trivial points. . . . In the translation itself nothing is being sacrificed that is materially rially worth retaining." Now there can be no question that a good tanslation should not contain misleading and ambiguous sentences. Yet certain students of Kant may be doubtful as to the possible results of this interpretative policy which the translator says he has, on occasion, adopted, for there are some who, despite the weight of evidence and argument offered in A Commentary to 'Kant's Critique of Pure D. of Pure Reason', and despite the impressive support of such scholars Adjoban Commentary to Hamp Smith's Addickes, find themselves unable to share Professor Kemp Smith's belief in 41 belief in the radical inconsistency of the various "stages" and "periods". periods" into which he has analyzed the Critique, and unwilling to ascribe to Kant so complete a blindness to the interrelationship of the various portions of his own work. Those who feel thus may perhaps be apprehensive lest the beliefs of the commentator may have, This fear has been sive lest the beliefs of the commentator in the standard fear has been been six was awakened in my This fear has been mentioned here because it was awakened in my

mind by the statements of Professor Kemp Smith which have been quoted and because a further examination of the translation leads me to believe that such anxiety is groundless. Though Professor Kemp Smith does not mention any specific passages which he has been forced to interpret in the manner indicated, it is obvious that extreme care has been taken to translate each sentence not so much in the light of the larger argument, regarding which interpretations might differ, but rather with reference to the particular passage in which the sentence occurs; it is also clear that all the more important "liberties" which the translator has felt himself compelled to take have been conscientiously noted, by means of square brackets or footnotes. At least, I have been unable to find any passages whose rendering I care to criticize; I have, on the other hand, found repeatedly that the new translation keeps closer to the German than do either Max Müller's of Meiklejohn's. It may be added that Professor Kemp Smith has frequently departed from his own earlier translation of those passages of the Critique which he quotes in his Commentary, but always, it would seem, in order still more closely to approximate to the form and wording of the German sentence.

The text used is that of the second edition with all first-edition variants fully translated and printed, either at the bottom of the page or, in the case of the sections on "The Transcendental Deduction of the Categories" and "The Paralogisms of Pure Reason," in the main text preceding the version of the second edition. This solution of the problem of how to take account of both editions is a happier one than Max Müller's use of supplements at the end of the volume. Dr. Raymond Schmidt's edition of the text of the Critique published in 1926, has been made the basis of the translation. edition constitutes a careful reconstruction of the original first and second editions of the Critique, a reconstruction made in the light of the numerous editions and of the voluminous body of textual criticism which is cism which have appeared since the Critique was first published. The more important of Schmidt's footnote references to alternative readings reappear as footnotes in the translation. The paging of the original first and second editions is indicated in the margin.

A full index last in decidition A full index, lacking in previous translations, is a welcome addition which should prove of the greatest value.

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RIVISTA DI FILOSOFIA. Anno XXI, No. 3. Sui fondamenti teorici della libertà : G. Tarozzi. Natura ed arte : A. Baratono. La dottrina  $_{ exttt{morale}}$  di Giuseppe Butler: E. Garin. La triplice metafisica: R.Medici.

Lightnall, W. D.: The Person of Evolution. The Outer Consciousness. The Outer Knowledge. The Directive Power. of Instinct as Contributions to a Philosophy of Evolution. ireal: H. A. Kennedy & Co. 1930. 216 pp.

Maritain, Jacques: An Introduction to Philosophy. Translated by E. I. Watkin. New York and London: Longmans, Green & Co. 1930. 272 pp. \$3.00.

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#### NOTES AND NEWS

To THE EDITORS OF THE JOUNRAL OF PHILOSOPHY: Mrs. Susanne K. Langer of Radcliffe College, who reviewed my book, The Logic of Events, in this Journal, Volume XXVII, pp. 361-363, gave 363, gave a criticism entirely impressionistic and unanalytic. Untortunately she has, and conveys, a decidedly false impression of my

The main point of her criticism is that I attempted "to reconcile phenomenation" the main point of her criticism is that I attempted to read and failed six of the spirit with the principles of mathematics". and failed, since this task is absurd. I did nothing of the sort. At the time when I the time when I wrote my book (which is my doctor's thesis) in 1927

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I did not know enough about the principles of mathematics to under I did not know enough about take. I did not quote the theories of the take such a presumptuous task. I did not quote the theories of the principles of mathematics "in support of this [i.e., my] modified Hegelianism." Anyone who takes the pains to read my book attentively can see that my criticism of the logical atomism is rather adverse. Nor am I a Hegelian (see my criticisms of Hegelianism on pp. 68, 84, 90, 97 ff.) as Mrs. Langer believes. What might have misled her is my contention that the logical and ontological forms are identical and that the logical forms do not subsist independently of mind. Though Hegel would agree with this, some of the Cambridge logicians also would, hence the view does not commit me to Hegelianism. For example, W. E. Johnson believes that a proposition, though distinct from judgment, does not subsist or exist apart from the latter. Whitehead also believes that eternal objects do not subsist by themselves, but are either manifested in events or entertained by God's mind. Incidentally, the method of Whitehead's philosophy is not so entirely different from mine as my reviewer would have it. Process and Reality would show her, if she understood it, that there is a good deal of metaphysics and what she calls "philosophical logic" in Whitehead.

The second main criticism of Mrs. Langer is that I forgot that the same words have different meaning when used by Hegelians and by contemporary Cambridge philosophers. I do not think that I overlooked this difference. At least Mrs. Langer does not show that I did, being content with an unsupported general statement. And I doubt very much whether she could justify her statement. The reason I doubt it is that the only two points of her criticism which she supported by page references show that she did not understand me.

First, she referred to page 61 as exemplifying a confusion of "generalization with abstraction." There is nothing directly said either about generalization or about abstraction on this page.

Secondly, she referred sarcastically to page 69 where I say that "revelation is an addition to the logical ground as such." Taken out of the context this sounds mystical and absurd. But in the context my meaning is perfectly clear. By revelation I mean a manifestation of logical implication in an act of inference. This latter is added in the sense of being extraneous to the logical ground (i.e., implication) and not in the sense of increasing its logical force.

It is these inaccuracies in the only two cases where Mrs. Larger attempted to substantiate her criticism that lead me to regard her review as impressionistic

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Das umfassende philosophische Literaturblatt für Wissenschaft und allgemeines Eeistesleben

berausgegeben von Ar. Arthur Hoffmann-Erfurt

DER INHALT DER HEFTE UMFASST:

Forschungsberichte, die die Hauptrichtungen und die wichtigsten Ergebnisse der die Hauptrichtungen und die Wieder der die Wieder der die Hauptrichtungen und die Wieder der die Wied nisse der wissenschaftlichen Bearbeitung aller Sonderaufgaben der Philosophie darstellen;

Eigenberichte, die den Vertretern selbständiger Forschungsideen selber Gelegenheit gehon girl in Ville Beite zu äussern; Gelegenheit geben, sich über ihre Wirksamkeit zu äussern

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strenger Sachlichkeit bekanntgeben; Bibliographische Listen, und zwar ständig über: die philosophischen Buchveröffentlichungen des In- und Auslandes; die philosophische Zeitschriftenliteratur; die Philosophie in Forschung und Lehre an den deutschen Universitäten und technischen Hochschulen und zu werden Universitäten und Hochschulen, u. s. w.

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TOL XXVII, No. 18.

## THE JOURNAL OF PHILOSOPHY

## HUMAN NATURE AND SOCIAL ECONOMY.

WITH all its contemporary preoccupations of such a technical sort, centering about the devices for precision in measurement, responsibility for policy. mics is still social economics. The test of its significance—not of sacuracy—still lies in the field of social action. One can measure milities; but the work will come to no socially justifiable end. and there are those who would like to say that a lack of preliminary scal feeling, a too-great insistence on the integrity of craftsmanship trits own sake, is the main drawback of all this effort. This points padistinction between craftsmanship in measuring, which is one ing, and experimental effort, which is another. It would be inridious to say that the one is, strictly speaking, scientific, and that to other is not. But it seems possible to say that the measurer as k, is an incomplete social scientist. He is a statistician, dealing with social units and temporal relations; but he solves no problems wider consequence. If social science be conceived, as some still lit should, in the general sense in which experimental effort has theaning, it would begin and end in other places. It would include tools of measurement, but it would also include other qualities of eraftsman's mind than statistical facility. It would begin with by as a definition of the area of work. The question first posed widbe: what ought public policy to be? Or: what ought the group Or: how ought the individual to act in his social relation-The problem posed, it would proceed to point out precisely the problem posed, it would proceed to point the situation has been and is into which action is to be injected. lought to go so far as to set up a temporal norm, departure from would have certain probable consequences. This would furnish habasis for the judgment of policy as we seldom have and reduce further the area of controversy. Here, the purist would have it, Further decision to act belongs to the group or to Further decision to act belongs to the grant Others, less puristic, would say that once the econ-Others, less puristic, would say that once the third point that what action in a given case promises best, it is his point that what action in a given case promises best, it is his There man lat action out as forcefully as possible.

There may be something in this critique of our modern pre-occulations. It may be something in this critique of our modern productions of the may be that economics is failing to conceive itself as the major of the measurer would It may be that economics is failing to conceive resolutionably say that it he experimental sense. The measurer would holdby say that it is impossible to experiment with social forces. 1 Continued from preceding issue, No. 17.

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His critic would say that experiments are continually in progres. The world is a laboratory; and if measuring devices are good enough they can select from events the relevant and causative forces nearly as well as though they could be brought under laboratory management. The question which is of interest here is what part in such a controversy human nature plays. Does our conception of it affect the issue? Is the individual and his nature significant in the economists' realm?

It may be said in a preliminary way that the statistician needs no knowledge of human nature—granting that any such knowledge exists or can be discovered. He would proceed in the same way whether he had it or not. The genesis of his effort, like the beginning of life, would remain a mystery. But once he had begun and our thing had led gently to another, it would make no difference to him what motives infused his time-quantity units or what human comes quences they entailed. He could remain aloof. His mystery would be, in itself, sufficiently intricate and the craft sufficiently restricted to establish a kind of aristocracy of skill about which he might build all the kinds of safeguards our invidious natures like to invent. If he could make the less learned in his craft seem less valuable to so ciety, it would lend enhancement to his status. And particularly, so bothersome and apparently so unmeasurable a set of facts as those which have to do with people's minds might be disparaged and be littled. There would be sure to be difficulty, however, about the last in a community which had become aware of the individual and his problems and had achieved a curiosity concerning human nature Then, too, he would be likely to run into embarrassment. If the end of measurement, of the establishment of trends, is not so "measurement" scientific" or "ethical" a one as the influencing of policy, it can much more easily be said to be that of prediction. A good historical trend, once established, is usually seized on as, in itself, prediction the inference being that trends do not end without cause, and the presumably the impinging forces have had somehow, during its of struction to be tall struction, to be taken account of and admitted to consideration.

Prediction is a pitfall in which many statisticians find themselves sooner or later. Their success in the past decade has, however, between so inconsiderable, as to teach a lesson of caution. For prediction made can be held against its maker to his great discomfort. more dignified no longer make them. The difficulty, then, is further embarrassment of justification. To what end does all effort and expense come? This is a question which even the myster of skill and the exclusiveness of craft do not create entire immunity. For the common run of folk are incorrigibly interested in ought to be done: in policy, for the state, for their groups, for the

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Does this mean that we have to have a knowledge of human na-Do we need to know, by definition, what it is? Doubtless it fold be pleasant if this were possible; and this may account for an round to lean on the instinct notion which possessed destibable elements, was, in other words, definitive. But later research in individual behavior and reflection upon its vagaries, has unintunately barred the way to any such easy escape. The behavioris if they have done nothing else, have taught us that, for our purposes, men must be taken to be what they do; and groups like-There is no knowledge of the mind except as it is furnished by he mind in action, involving the body. In fact it is only the body thich furnishes data—a body living, acting, achieving. Mind, inind, remains an assumption. The center of interest has shifted in this mind as an entity, from human nature as a describable mehanism, to the body as a working implement impossible to abstract m its environment and from its problems of adjustment, just as are impossible to abstract as an economic quantity. The one ing at a time method is no more profitable in psychology than in

If this situation is accepted with all its implications the superior isdom of those who were not carried away by the specious pretenins of the instinct theory appears. They seem to have been right insisting that there is no common human nature which can be and used, for theoretical purposes, like the elements of chem-Perhaps this elemental notion might never have gained the dit did if those who had accepted it had known their sciences letter. If certain writers, who have since found wide audiences, had peared coincidently with McDougall, much of the attention he thichead Barre been characterized by greater scepticism. Russell, hitelead, Eddington, and others have remade, for Americans, the thre of the physical world. Theirs may not have been the original Millikens. Bohrs, or haggs; but it is not Einsteins, Mitchelsons, Millikens, Bohrs, or that social scientists blaggs; but it is to them and lesser teachers that social scientists oso; but it is to them and lesser teachers that social and it improved contemporary knowledge of the world. And it ka kind of learning, which throws vast light on the naïveté which the Seven Instincts.

It is the Seven Instincts.

It is the great contribution of the general school called "behavior-including in this term the Pavlov-Cannon "physiology" as well

as the Watson "psychology," that they destroyed a doubtful the as the Watson psychology, retical construct and replaced it with a usable reality. The great retical construct and replaced it with a usable reality. retical construct and replaced is that it can not be touched by safety of categorical abstraction is that it can not be touched by knowledge; but this is also its ultimate source of danger. For we are always discovering things and when the definitions can no longer be tortured into including these phenomena, they fall into disuse This is happening with the abstractions of classical economics and it is happening with "elemental" psychology. It makes no difference in the work of the modern economist whether laws are clung to g You can believe them if you like—he often seems to believe them himself—but they have no working relevance for him; and similarly the behaviorist is untouched by belief or disbelief in the instincts. He has no use for the notion. But singularly enough it makes a difference to economists whether the instinct theory is valid If it is valid there are many perplexing questions concerning causa tion to which he has at any rate a partial ready-made answer. If it is not, then instead of answers, he has only intimations of necessary research.

To illustrate take two perplexing problems: that of choice and that of industrial unrest. If goods are chosen in response to instinctive inclinations, one has only to group them about the various instinct categories, and weigh one set of pulls against others. This sort of activity should lead to prediction, concerning any good, of the strength of the probable demand for it. If the instinct theory is not accepted, choice becomes a problem infinitely more complex If the mind does not start with fairly simple determined sets, but is merely an instrument of a highly practical nature for determining in a given situation which of the available goods offer the best adjusment for the time being, to the outer world, it is far less easy to say what in a given condition, an individual will do when faced with the necessity of choosing. He may do almost anything: the determinants are minants are not simple, but various. He may have an intelligent of any degree of reflectiveness; he may have stored away any number of guiding a repulity of guiding experiences; goods may have any degree of availability depending not only on their physical presence but also upon abilities to acquire the to acquire them and the competition of other possible choices. into such a situation that the economist who interests himself in causation has to at causation has to step. There is no establishment, either, of even approach to causation approach to causation, without taking this choice problem into at count. For it lies at the count. For it lies at the very heart, for instance, of price determination or of any of the tion or of any of the other traditional puzzles of economics. stant "law" is abandoned with its formula of rational self-interest, the economist must decide the instinct the economist must decide to accept some such formula as the instinct theory offers or to explore, as best he can, this field of individual reaction for himself. Similarly action for himself. action for himself. Similarly industrial unrest can be explained

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oplained by those to whom the instinct theory appeals—as a frustrain psychosis. Instincts set in a nomadic, hunting age, find few oution psychosis. The cause is the impossibility of instinct exercise; the cure lies in the substitution, as best that can intinct exclusion, as pest that can be managed, of various sublimation activities. But if this neat explanation becomes suspect, unrest has far more complicated causes be sought and a far less simple cure. It arises, perhaps, in part pressures on mechanisms unsuited to their duties; but also partly from the dispossession and uncertainty of the modern worker, is lack of social rooting, the contrast he is free to make between the ideal and the real; all these are maladjustments traceable to a nore complex organism than is postulated by the instinct theory. It is because we are above our environment—have not yet suited it to our needs—not because we are below it, that problems of unrest arise. It is a dangerous assumption that our environment is growing less guited to our natures. To this conclusion what we know of history and pre-history does not clearly lead. The pressures and strains of tribal life in the wilds may have been worse than those of city life in Springfield. We may have been growing toward a better rather than a worse situation for the individual. At any rate we must suspet the simple formula, avoid its generalization, and consider men s they behave in their various dilemmas unless we are to run the danger of possible misinterpretation and misreading of the evidence. Industrial unrest as a phenomenon no less than the choice of goods needs study and the accumulation of data rather than borrowed theory.

If this is really what is needed, it will be said, those economists are correct who have become fact-gatherers and measurers to the exclusion of all else. But this is not necessarily true. What has been said before concerning the superiority of experiment as method is not invalidated. These fields of study lend themselves as well as any others to the problem approach; the desultory gathering of letalled historical description of the last ten years.

The attitude of the experimental economist toward human nature without too great violence, be called "behaviorist" in this of what men are, but of what they do. It is somewhat easier to see sphical attitude which we call instrumentalism than it is to underton the ways in which the behaviorist method may be transferred the economist which has doubtless inhibited progress. He has not whether he was dealing with men as individuals or as

groups. He sees behaviorism as in every way a satisfactory method But its satisfactoriness depends far less on its purely psychological implications than on its anatomical, its mechanical and matter-of-fact analysis of action traced to a sufficiently ultimate source in the tis sues of a body. This is something which can be caught and held to, something real and of the nature of fact. Intellectual consent to this method and to its results comes easily. But the economist's interest in many instances lies at a far remove. Out in the market place, in the factory, or on the farm, a range of data is dealt with which, though it can be shown in logic to be transformed into its present actuality through the operation on it of individual minds as, for instance, in the perception that all prices or wage rates must be established and consented to by individual minds, can still very easily be isolated and cut off from its sources for study. A price comes to be accepted as, in itself, something. Or, what is even more striking, an index of prices comes to be so accepted. But a price or an index is in no real sense, a datum. Working with these quantities, to establish mutual relations among them, or to set up temporal trends, can not possibly bring out causal theories which are wellbottomed and which can carry us further than themselves into useful generalization. What lies beyond is still to be guessed at. For this the analysis has to probe backward to its source as the behaviorist finds his sources in individual tissue. Neither the economists nor the social psychologists appear to have understood that the individual mind stood in this relation to their work. The failure to understand has made much of their effort sterile. Their analysis may, as a photograph may, present a picture, or even a moving picture which conquers time. It is often artistically done. But it probes no causes, because it touches no springs of action. It can not predict const quences because it explores no motives. Economists may claim to have become better historians than any of their predecessors, but any claim to an experimental science must be rejected. Economics can never become that until its practitioners consent to an enlarge ment of the area within which their characteristic activities are carried out. When they have got from the market place a price quantity it is quantity, it is not sufficient to measure its behavior in time or to compare it with others. It is not even sufficient to conclude, after rigorous and patient research, that because similarities arise, men's minds are function: minds are functioning in a common way when faced with choices involving price. The land a common way when faced with choices involving price. involving price. They have not yet seen and recorded those choices, they have not been and recorded those choices, they have not known the mechanism at work; they have not approached an analysis and mechanism at work; they have not approached an analysis and mechanism at work; proached an analysis of impinging forces and judged the effect of each. It is not complete impinging forces and judged the effect of each. It is not complete behaviorism to record how comparable prices act. That can be act. act. That can be achieved only by seeing how men act to create

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It is as though Pavlov should have been content to record prices. It is and to describe the various ways of their doing it that men warms of their doing it without interesting himself in exploring what it is in man which mibout miter to walk and creates the varieties of this motion. walking" is an abstract the reality of which consists in many mech-Walking doing it. His method is superior because it enables him to eneralize from the nature of the mechanism before him what will gean be done with it under certain arranged or probable circum-This has not been arrived at by pure anatomical descripim or generalization, but by the correlation of description with chavior. He sees what mechanisms do and judges that they may ontinue. This would not satisfy one who looked for a solution of the ultimate mysteries of life and motion; but long experience shows two be sufficient in a practical sense. The economist might say that the market is not analogous; it has no anatomy, no mechanism; nor bre social groups. They are imaginative abstracts without body or brain, muscle or nerve. All social action must be traced back into individual minds which create it, if work on origins is necessary for athieving the solutions of problems.

There is no group mind. Men perhaps act differently in groups hom what they do as individuals. But this is mere commonplace. The group, in this instance, is only another exterior influence, it has not acquired a piece of the individual's mechanism; it would he truer to say that it has got itself into his mind. It has made is influential as his house or his automobile is influential. elligence, habit, will, have latterly, by the social psychologists, or dertain group of them, come to be spoken of as phenomena, not the individual mind, but of an abstract group mind. This way speaking is based on the single generalization that groups do lare characteristic ways of acting. But it is a tour-de-force which the considerable violence to fact. It has made possible the erecof a formidable body of social theory all of which must be set as useless for practical purposes, however symmetrical its conhat there appear to its architects. The real situation is, of course, hat these terms are descriptive of attributes belonging to the individual; and as for the underlying basis of group theory that men behave uniquely in the mass, this too must remain suspect to the realist until some comparison can be established. For to him it will that the comparison can be established. that the individual always acts in and through a group. Robinson Crusoe psychology is no more fruitful than Robinson

Group standards and motives, group intelligence and will, are which belong to a certain number of individuals and count for all who come into contact with them. The conservative

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force of standards is not something which exists apart from in dividual reference, is not an impalpable atmosphere in the community, but something which has become embedded in individual munity, but sometimes there. A five-cent price for loaves of bread which has persisted for a long time is more difficult to adjust to changing influences of cost than a less well established one for something else. But the difficulty of change is traceable to the implanting in consumers' minds of its rightness, each of them separately, and a consequent feeling of outrage at any violence done in the market. The custom of a five-cent price is simply a way of speaking of the probable resistance to change of many consumers The means of lessening this resistance is by appeal to the many natures which harbor it somewhere in their tissues which are mind Nothing is gained by knowing it as custom or as a group ohe nomenon; much can be gained by observance of individual reaction to various sorts of argument. The fixation phenomenon is a habit of the individual; if many individuals have a generally similar set of habits it is because there were roughly like mechanisms to begin with and because a common set of influences were brought to bear A set of indexes showing the price of loaves of bread in time and place reveal the concurrence of individual habits; they are useful for this. But they show nothing about the process of their establishment, nor of the means of modification. They are able to show, in the gross, certain phenomena of consent. How many break their habit and buy at an increased price; or how many more will establish the habit of buying at a lower price can be determined after the fact by statistical means. But there is an enormous and important un explored residue of discontent or appreciation, which might be extremely useful in future cases, which is left wholly out of account

To change the illustration, consider wages. Consent to a changed wage can be measured statistically by the number who go on working at one which is reduced or the number who may offer to work at one which is one which is increased. This abstracted knowledge is useful. But it is also important it is also important, for many purposes, to know how work is done at the new rote. The many purposes, to know how work is done at the new rate. If standards are so closely set and individual willingness so guarded against by mechanization that it makes no difference to quartity difference to quantity or quality of output—a rare situation as yell anyhow—it still :anyhow—it still is important to one who interests himself in welfar, in the labor movement in the labor movement, in consumption, and in other affected fields, what happens to the interest of the consumption of the con what happens to the individual who has thus been seen to consent. Nor, what is equally significant, could much be told about future

<sup>&</sup>lt;sup>2</sup> There is an interesting intimation of this in the "consumers" surplus notion of classical economics which is assumed to arise when one actually part less than he might have been will less than he might have been willing to pay.

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hture time be more or less resistant. It is not so much of interest here to point out the limitations of It is not so as the limitations of statistical abstraction—these are sufficiently obor present associate sumciently obrolling of abstraction can involve for the source of motive and action thich is always the individual mind. Even if we pursue our price of wage illustration into central market places, in which the ideal mage in the ideal and it is in the ideal and the same area of unexplored ground. Wheat, pig-iron or any ther raw or semi-finished materials are not used by consumers; the have no direct contact with their prices. But there is a very rel derived influence which would be less subject to rule-of-thumb formulæ if we had tried more patiently to understand why it is that onsumers act as they do in the various choices they are compelled make. The year in which this is written has seen an unexampled reduction in the number of beef animals marketed in America. Was his due to changes in consumers' reactions to the possibility of eating lef! Then why should the price be nearly doubled? And with rice nearly doubled, why has not production increased? Why, inad, should the swine population have grown so that pork consumpin brought our family meat average up to the level of the past? Thy is pork a substitute for beef? And why is mutton not, as ap-Mans to be the case? Are these why questions irrelevant to eco-We have the gross knowledge; but there are many conproblems which are of interest to some. A knowledge of Moes would not have warned us, during the agricultural depressions' Tost phase, that a farmer's relations to his occupation of husbandry la very special one. We might have known that it takes several Take to grow a cow, and only one to grow a hog. We might even tare known that high prices (or low ones, either), intermittently mintained, fluctuating widely, are disastrous to long husbandry pro-We might, however, easily misjudge the point at which The have no We have no way of knowing what residue of maladjustment, what thal costs in productive possibility, we ought to charge against the light costs in productive possibility, we ought to charge against the dispossession of several million farmers in a few years, and in the confronted with the choice have gods. We had no warning that, confronted with. the choice, housewives who could not get beef would choose pork. than could not get beef would encould not get beef would encount of the than could list a hundred questions of hore than casual importance which lie beneath the surface of to something decisive Went on in thick which satisfy too many economists, many bick went on in the facts. went on in the individual minds which acted on the facts.

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Experimentally scientific procedure is absurdly inhibited in many cases by a superior scientific pose. This may seem parador. many cases by a superior scale that the scientist must deal only with measurables, with defined units. What has not yet been reduced to the measurable or clearly defined is excluded. In the most frequent case in economics, the exclusion of this undefined material makes any scientific procedure at all impossible because it excludes what is indispensable to the solution. The more scientific economists fall back, therefore, on historical description of phenomena which there can handle in the only way their consciences will permit. To point this out is not to argue that what is uncertain or unmeasured ought to be treated as though these qualities were present; but rather to contend that there is a duty not to rest until they have been made certain and measurable. There is no excuse, except that of difficulty, for not doing so, for the perception that the mystic can be ruled out and that what is is what happens, performs precisely the service of making the phenomena of human nature available to analysis If it is true that exclusion is damaging to scientific results, this removes any excuse there may have been for it, so long as an area of mystery and untouchableness existed. Nothing prevents en nomics from being experimentally scientific except a mistaken conception of what is not scientific material. What of policy? There is a grave and widespread suspicion of any interest in the controlling of social events. The economist who ventures advice to statesmen, or who treats critically the stiff provincial dogmatism of politicians, is apt to be accused of stepping outside his proper sphere. He gels himself into a kind of embarrassment to which other scientists and immune. Yet there seems good reason for believing policy to be a possibly fruitful point of departure. It seems to involve the definition of problem. tion of problems in terms which are strictly experimental. What ought to be done? Beginning there in the commonest of everyday dilemmas, the procedure of science elaborates easily and naturally. The general wonder, the hypothesis, the measurement and testing the cautious statement of theory or generalization, all follow. are grave difficulties: the usual impossibility of laboratory representation; the unwilliance of the usual impossibility of laboratory representation. tation; the unwillingness of vested interests to give way even in the face of likely improvement; the multiplicity of impinging forest which, to the scientists which, to the scientist's despair, create an atmosphere in the prevailing change of account vailing change of casualness and intermittency so difficult to reduce to measured order. The this meaning the scientist's despair, create an atmosphere in the reduce to measured order. to measured order. These have to be admitted. But this meaning that the tool really only that the tasks of a social science are more formidable than any of which we be This is the present than any of which we have yet had experience. cross as it may be the ultimate glory.

The social scientist will not be stopped ultimately because he

indis camped across his path those who would dispute his progress The intimidation of science has never yet succeeded. But profes. The do to convince the sceptical of his disinterestedness? that can lie us that he can do anything. In fact it is a rare circumstate if he is actually disinterested—if that means not caring what The geneticist perhaps ought not to care whether the improved; the electrician ought not to worry about making telephony or transmission more efficient; the chemist ought not to the whether his superior dye is used; the bacteriologist ought to be idifferent to the conquest of disease. When these ethical biases are removed we can expect the economist not to care what goods are consumed, how much is paid for them, under what conditions they are made, what degree of efficiency infuses the organizations produring them, or what kind of social controls would be salutary if ininted at various points in these processes. Meanwhile his own simple nature will probably continue to accept these issues as the points departure for his work. Points of departure are not to be confixed, however, with results. These are not necessarily polluted because he began by caring that things should be better; by seeing that a pressing problem awaited solution. He may or may not feel ome missionary impulse at the end; but his work stands by itself; itean be tested again; it may even be judged to have various implicaions other than those he chooses to attribute to it.

The important thing to point out here is that it will be anchored lost safely and will resist the winds of controversy most sturdily then it has been wide and deep enough to reach and cling to rock This is individual human nature; "group behavior" is a and in which anchors will not hold. Nothing is done which indiduals do not do. But, it will be said, there is surely an immense atta of delegation. Things are done for us. We consent, but not We choose, but not in detail. Things happen, even, to we object, but in which we are inevitably involved. There is, duittedly, a problem—and a difficult one—of delegation involved lete. It has never yet been explored. When it has we shall be on the track of social action, but of a sort different from any present or social action, but of a sort different from any finds at work "group thinking." In it we shall discover individual In it we shall discover thinking." In it we shall discover the play of disagreement and compromise, resistance onsent among those involved in absentee control; but we shall the play of disagreement and compromise, we shall the find phonon those involved in absentee control; but we shall the play of disagreement and compromise, we shall the find phonon those involved in absentee control; but we shall the play of disagreement and compromise, we shall the play of disagreement and compromise the play of disagreement and disagre by find phenomena with origins outside individual decision even hough many individuals are involved and even though some may bare had more formative influences than others. And it is this thich we need most to see clearly. Delegation is merely one of those ball of the seed to be studied We need most to see clearly. Delegation is merely one of the studied watematized watematized with the course of solving Watematized—will, indeed, have to be in the course of solving

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problems we shall soon have to meet. In one sense it is a derice which makes for efficiency. We certainly could not manage on which makes for emetals, the jobs to be done at a given contemporary affairs without it. The jobs to be done at a given time in a factory or on a construction job are not actively decided on by all the individuals who contribute to the work. Even on choices of goods—such as the kind of food we shall eat or clothes we shall wear—are made vastly simpler because we have delegated many preliminary decisions concerning them to those engaged in the ele mentary stages of their production. But these delegations have been made to individuals; and workers or consumers, as individuals reserve the powerful influence of consent. We have, of course, for a long time been fumbling toward the establishment of probability in this field of consent. Our indexes of prices, of consumption to gether with their correlations under varying circumstances, furnish some data for generalization here. The crudest and earliest seen of these was that high prices restrict consumption with the corollar that low ones stimulate it. It was a short step, again, to the generalization that there were types of things for which even this rule had to be modified and so there grew up the "law" of flexibility. On this rough foundation the theory of differentials, so important a part of classical economics, was built. This is the kind of contribution which was made by the classicists to our knowledge of human behavior in the economic field. It is no wonder that, with so crude and incomplete a foundation, economics was unable to progress in in really understanding price phenomena.

The other element in delegation—the individuals to whom man date has been given—has hardly been studied at all. The suggestion presents itself that this may have been because a science of economis was thought of not as solving social problems, but as solving the problems of these particular individuals. For these are the might of our time; the real rulers are our economic deciders. It is not strange need to be stra strange perhaps that the orientation of economic studies should have been influenced by them. It is certainly their problems we study mostly. How to increase efficiency in their factories; how to enable and to persuade consumers to take more of the goods from which they profit. Any change in social control, any movement toward the liberation of the liberation of the consenters, involves study from a new point of view. The functions of the consenters, involves study from a new point of the functions of the view. The functions of decision, their efficiency, their aims, are kinds of study we can be social kinds of study we consistently neglect. Deciders ought to be social servants, one would servants, one would say, and yet it does not seem exaggerated to claim that these conscious and yet it does not seem exaggerated to be claim that these conscious and yet it does not seem exaggerated to be claim that these conscious and yet it does not seem exaggerated to be claim that these conscious and yet it does not seem exaggerated to be claim that these conscious and yet it does not seem exaggerated to be claim that these conscious and yet it does not seem exaggerated to be claim that these conscious and yet it does not seem exaggerated to be claim that these conscious and yet it does not seem exaggerated to be claim that these conscious and yet it does not seem exaggerated to be claim that these conscious and yet it does not seem exaggerated to be claim that these conscious and yet it does not seem exaggerated to be claim that these conscious and yet it does not seem exaggerated to be claim that these conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious and yet it does not seem exaggerated to be conscious a claim that these conceive themselves more usually in a different role.

The community is to the The community is to them an exploitable field; workers are to more their materials, guide their their materials, guide their machines; consumers are to consume their goods, pay those prices goods, pay those prices which yield them the highest net returns society letariat general bave be rediscov contribu crease of fundam the poss discover

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This fundamentally false and dangerous conception of industrial This fundamentally false and dangerous conception of industrial speciety as possessing an aristocracy of those who decide and a prosciety as possessing an aristocracy of those who decide and a prosciety as possessing an aristocracy of those who consent has been strengthened, so far, by the letariat of those who consent has been strengthened, so far, by the letariat of those who consent has been strengthened, so far, by the letariat of the science general orientation of economic study. The results of the science general orientation of economic study. The results of the science general orientation of the science and its most important rediscovery of human nature has, until now, had its most important rediscovery of human nature has, until now, had its most important rediscovery of human nature has, until now, had its most important rediscovery of the acceptance of salesmanship or the incommental change has even led many social theorists to explore the possibility of the acceptance of this whole situation and to try to discover forces working in it which might indicate a growth of social well-being as a by-product, so to speak, of private enterprise—that is "private" for its owners in the sense that they owe society no formal dues of service.

And yet the renascence of interest in the individual, coupled with

And yet the renascence of interest in the individual, coupled with adearer apprehension of what, for economics, is the most profitable mientific method, possesses a threat to this established order of things. Penetration of abstracts until the individual is discovered in action; pursuit of the study not only among the functions of consent, but also among those of decision, are certain to raise questions of purpose, together with facts concerning the methods and results of economic enterprise. The revelation of these facts may be the beginning of social reorientation. And the conception of experimental method in economics as having a beginning in policy—what ought to be one will furnish a field of application for the facts of human behavior which, in one instance after another, may present the altematives of action, and measure the efficiency—in human terms—of our economic efforts in such ways as to bring out contrasts which are now hidden in neglect.

Economists are now, or soon will be, confronted with the necessity of numerous embarrassing decisions—as to the value of the present predominant quantitative method, as to the enlargement of the area of study which is called economics, as to the choice of the startingplace and the purpose of their characteristic activities. There are What might all signs and certain others which seem discouraging. What might be called the mergence of the "social sciences" is very rapidly taking place. divided the field of social behavior into departments. It seems somewhat absurd already to have many natural scientists who can not say whether they ought to be uatural scientists who can not say whether they our "physicists" or "chemists"; but the barriers which separate historians, and physicists' or 'chemists'; but the barriers which are and psychologists, social psychologists, political scientists, historians, and physicists are obviously they owe ociologists, social psychologists, political scientists, miscorning owe their continues even more imaginary; even more obviously they owe their continuance to an academic traditionalism which can not long It is one individual who works, eats, drives his automobile,

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is apprehended by the law, forced to engage in wars or lesser con troversies. It is one other individual who tries to understand the relationships set up by all these activities, pressures, and privileges, Both analysis and education suffer from artificial separations. And if we accept as the more fruitful of the possible alternatives for economists' effort, the starting-point of "what ought to be done" and the end of more orderly arrangements, the method of social sei ence easily reveals itself as the study of individual behavior in a social milieu. If in the past we have tended to reverse this procedure and to study social behavior in an individualistic milieu, that was for reasons which, when they are starkly revealed, must lose their prestige. Masses of men do not exist to make some one's enter prise profitable or to create comforts for an intellectual class; we must not study them with this preconception. They simply exist an the best terms they can arrange in a society and with a set of institutions which they did not create and in the understanding or remaking of which they have had very little assistance from the experts they support. The generalized problem of humanity is that of progressive movement into easier circumstances. This sets the orientation of a social science in such clear terms that confusion as to aims, at least, would seem impossible. Yet such is the inventive ness we can bring to the clouding of issues that this would seem, in our contemporary economics, almost an absurd, certainly an "unseientific," source of motive. However much we care to further this achievement of the race, we must, by our present convention, pretend to indifference or even to hostility.

Social scientists who make a set for science at all costs, are apt to find themselves in the situation of being neither scientific (in the experimental sense) as to method nor social (in the sense of further ing human achievement) as to purposes and results. These under simple care the state of the stat sirable consequences come from uncritical borrowings both of methods and of aims. It is one thing to study the work of those who labor in neighboring vineyards. It is quite another to follow slavishly the detail of procedure instead of keeping in the forefront of one's regard the fundamental notion that a crop of good size and traditional quality is tional quality is, after all, the test of the husbandman's success. The wines of the Côte du Rhone and of Orvieto are produced in different ways here. different ways because their cultivators have had to face differences in the conditions of in the conditions of cultivation. Who shall say that one is better than another; or the conditions of cultivation. than another; or that one method is better than another which achieves such equal are method is better than another which achieves such equal success. There is a saying in France (not given currency by the commences of the commence currency by the commercants, to be sure) that a wine should be consumed where it is produced to be sure. sumed where it is produced. This is held to be so partly because of a fancied travel change. fancied travel change; but only partly that. It is something more

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ot given be conruse of a than fancy that the whole color and spirit of living comes ultimately to blend with the vin du pays. Such a simple belief of simple folk to blend with the vin du pays. Such a simple belief of simple folk to blend with the vin du pays. Our scientific worlds have entains a truth we are apt to neglect. Our scientific worlds have their borders broken by invaders. The popularizers of stelly had their borders broken by invaders. The popularizers of the physics and chemistry, for instance, have made it possible for those physics and chemistry, for instance, have made it possible for those physics and chemistry, and heretofore somewhat fearsome. We bring back some captives always. The sea-change which is suffered would surely make them unrecognizable in their home country; that is not important if a blend with the spirit of some new home should turn out to be a fertile marriage. But there is needed great eare and conservatism to prevent the springing up from such a union of a hybrid strain which like the famous mule, possesses neither pride of ancestry nor hope of posterity. We need to be something more than casual in our borrowings from other workshops.

There is something to be said for staying on our own pied-à-terre, studying our own soil and climate, using our own traditional methods or inventing new ones ourselves out of our own necessity. It is not to be denied that a flash of insight now and again is born of journeying and observing in foreign fields. It is always credible that some new plant which shall mean to humanity what the wheat plant did may be discovered in some intellectual Asia. But wheat plants are not discovered frequently; and it is even possible to dissent legitimately from the prevalent contemporary judgment that the worldwide spread of wheat was a good thing. Long views are difficult ones and not infrequently discomforting, but we must try to find them. This is not a plea for unconsidered exclusion. If we are invaded by phylloxera or a strange new rust we must find means to combat them. But, borrowing as little as possible, and working in our own laboratory, we may get better results than by selling ourselves into partial slavery.

It requires courage in our time to assert an independence of this relatively uncompromising sort. These are times of easy borrowing and lending. A dime's worth of ingenuity is expected to do a dollar's worth of work. But ingenuity is only cheap when it is second-hand; and like all second-hand goods, it is not so good as when it very few of these used articles in social science. They are more time been the laboratory of chemistry. Yet the evening wear of the Rue de la Paix may disclose a certain irrelevance to provincial serted. And so social scientists may develop a feeling that a monoping of fashion in scientific method is undesirable or, anyway, that

foreign fashions are so. Our own designers may not be Newtons; yet we have our Adam Smiths. Of course, we are more reluctant to follow his example in designing suitable procedures than we are to wear those for which he was personally responsible. But that is an inferiority complex of another sort. One great trouble with social science has been that its great examplars have been too-learned men We ought to have had a few ignoramuses such as have served to give the natural sciences their prestige. Your true genius finds it unnecessary to select or concentrate. Nature has done it for him The idiocies of scientists in the affairs of the going world are traditional. But this world is the very field in which we must labor. The genius-idiot sort of person can never have spread enough to be a social scientist. Our practitioners have to have a combination of qualities which, in itself, makes circumscription and concentrated achievement difficult. To pretend that this is not so; or that work after another pattern will get us anywhere is simply to follow after false fashions. We shall never have a wine of Orvieto or a Côte du Rhone, either, unless we recognize our own climatological unique nesses and determine our husbandry on them.

REXFORD G. TUGWELL.

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#### LIMITATIONS

OW that Einstein's system has burst upon us like a glorious star of the first magnitude, I wish to ask seriously why it is that more physicists and mathematicians do not study Bergson's philosophy. As I see it only one who understands Bergson can fully appreciate the rare beauty of the work of this man Einstein who certainly will be placed beside the Greek immortals.

The particular thing I am going to discuss here is the limitation of human language as a means of conveying one very subtle point in philosophy which Einstein's system has brought to our attention.

Consider the phrase "velocity of light" now represented in physics by the letter C. Just what do we mean by this phrase! Offhand it does not appear ambiguous. Certainly reality as lived by us is full of experiences to which the word "velocity" applies with no ambiguity. But wait a moment and consider the following experiment. There are two points, A and B, separated by a distance L, said distance being measured by a scale on the same gravitational system. At A there is a rifle pointed towards B and an electric light in a box having a movable shutter on the side towards B. At a certain moment, that is, when all bodies of matter have a certain space relation  $(t_1)$  the rifle is fired and the shutter is opened and

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dosed. At B we have a target which receives both the bullet and the closed. At a later moment, that is, light signal on a photo-electric cell. At a later moment, that is, light signal on matter have a different space relation  $(t_2)$  the target is affected by both the bullet and the light signal.

Now how do physicists describe this phenomenon? Well, they Now now of light travels from A to B with the velocity C and a bullet travels from A to B with the velocity C/n." The form of their language is thus the same for the two velocities, the difference being only one of magnitude. But think a moment. The two things are not only different, they are incommensurable. In the case of the bullet there is a thing which can be handled, which has an existence as a separate material unit and which can be at rest relative to the earth. Nothing of this sort can be claimed for light. When you use the symbol C you must not think of some thing moving in something else, which is what you can do in thinking of the bullet. It is true you have to talk of the velocity of light, which equals 185,000 miles per second, just as you have to talk of the velocity of the bullet which is 4,400 feet per second, but this is only because of the limitations of language. If you wish to talk about C so as not to mislead anyone you must say "A light signal, started at t1, can produce an effect 185,000 miles away at  $t_2$  where  $t_2 - t_1 = 1$  sec-

It is because physicists do not see this ambiguity of language that they make such absurd statements as "A man travelling at the speed of light would never grow old." Light is not some thing travelling, it is just "action over distance," and no man could travel at any such speed (relative to his own gravitational centroid) and remain a man; he would not even remain matter, but would turn into "action over distance" or radiant energy if you prefer the terms. The transformation, however, would not be due to the velocity, but both the transformation and the velocity would be effects of something deeper, namely, an intense field at the point where the transformation took place. Why do writers mess things the way they do? Thus a very well-known writer on relativity, a man with an international reputation, blunders badly when he writes about the so-called "time triangle problem," and he blunders simply because he does not see the ambiguity in his use of the word

It is perfectly true that metaphysics has to step into the gap between A and B and fill it with a theory. That is all right, but don't min. don't mix metaphysics with physics. It is just this mixture that has thrown a smoke screen about relativity. The filling of gaps is the cause of a lot of trouble in science.

Bergson's philosophy is saturated with the thought that for

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physical science reality is not a continuum, but a series of jumps. We can know the beginning and end of a jump but we can never know the gap between the ends. Philosophically Bergson's point is easy to prove because to know what happens between the ends we have to interpose something in the nature of a target, but then we have found nothing but a new end to a shorter jump. Also it happens that modern experimental physics supports Bergson. I refer, of course, to the quantum of action and Heisenberg's work.

The idea expressed by the phrase "Nature abhors a vacuum" is certainly true of the mind of the scientist if not of Nature. My! how he does abhor a jump! He must have a continuum and thanks to the great mathematicians he has got one. But this continuum is metaphysics, not physics. Certainly recent experimental physics

supports Bergson's discontinuity.

There certainly can be no objection to the mathematician's continuum. It is a proof of the marvelous capacity of exceptional human brains and pragmatically it is necessary as an aid to statistical prediction. However, when we have a theory (metaphysics) which allows us to make correct predictions for a great many years we get careless and allow this metaphysics gradually to disguise itself as physics and then we get a whole library of mystery stories and nobody can find out who committed the murder. To most people relativity is one such mystery story and its solution is impossible until you see through the disguise worn by "velocity."

If you take the boat at Albany and steam south on the Hudson I predict that eventually you will arrive at New York, but I am not so stupid as to claim that the Hudson River is the only way from Albany to New York. The wave theory predicts a lot of light phenomena; the quantum theory predicts another lot of light phenomena. Very good, thank the Lord for so much and use each theory as a tool for the work to which it is suited, but don't try to tell me that Nature must fill the gap with either quanta or with waves because you don't know anything about it and never will know anything about it for the simple reason we are so constituted physically that we can know nothing but the ends of some action, said action covering what we call distance.

A wise man once said "To realize one's limitations is the beginning of wisdom,"

WHITE PLAINS, N. Y.

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#### BOOK REVIEWS.

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A Study in the Logic of Value. MARY EVELYN CLARKE. London:
The University of London Press. Pp. x + 330.

This book affirms an interpretation of values similar to that advanced by G. E. Moore, and largely supported by John Laird and Bertrand Russell. In the course of an extended polemic, the author makes clear the issues on the subject of values between this British school of realists and their various opponents. Miss Clarke is a mid expositor and a keen critic. The book is not over technical, and can be understood by any philosophical reader interested in the problem of values. It states sufficiently, and with a marked effort at accuracy, the positions criticized. It is well documented. The merits of the school supported are made manifest, while the critical reader will readily discover its limitations. The book is a valuable contribution to the subject, and deserves general consideration.

Miss Clarke's thesis is, that values are indefinable predicates, recognized intuitively. They are neither epistemologically nor ontologically dependent on minds, "though some values are, as a matter of fact, realizable only in conscious beings or through their activities" (pp. 319 f.). While value predicates are objective, the metaphysical implications of values are few. No certain inferences as to the general nature of reality can be drawn from them.

The author thinks that the best way to establish her thesis is to show that all alternative theories are open to refutation (pp. 43 ff.). First, she attacks the "Subjective Theories," which variously identiby value with the objects of feelings, desires, or interests. To attempt to analyze "good," "ought," "beautiful," etc. into mental proctisses of a different kind is to commit what G. E. Moore calls the "naturalistic fallacy." It is like Mill's identification of the desirable with the desired. Baldwin, Bartlett, and the earlier views of Meinong and Urban are criticized, while Perry's account is subjected to a searching analysis of thirty pages. All are found guilty of Psychologismus. Secondly, attention is directed to the "Neutral Theories", Theories", which seek to define value neither exclusively in terms of subject. Subject or object, but in situations in which the two are related. Under this head Dewey and S. Alexander are discussed at length. Both are found ambiguous and inconsistent. Their positions, if logically thought out, would be found to presuppose values independent of the situations in which they are recognized. Value does not involve the situations in which they are recognized.

intelligion or their properties is intelligi or sentiri, than the esse of objects or their properties is

Thirdly, in discussing "Objective Theories" of value, Miss Clarke

defends the doctrine that value is an indefinable predicate apprehended by judgment against the criticisms of Santayana and Urban, and attacks the alternative theories that value is apprehended by feeling with a presentational function (Meinong's later view), that value is a relation between objects (which she passes over rapidly with a brief criticism of a paper by Sheldon), and that value is an "objective" (Urban).

It must be conceded that Miss Clarke has made a strong case for the epistemological reality of value predicates recognized in intuitive judgments. "Good" and "ought," like "sour," "sweet," "warm," and "blue," can not be analyzed into anything else. One feels like asking the author, however, whether, just as physicists and physiologists have discovered the external conditions under which intuitive judgments of secondary qualities are possible, so have not psychologists and sociologists discovered the conditions under which men make judgments containing value predicates? "Blue" is not identical with a certain wave length of light; but its existence in volves it. Can we not in a similar way affirm that "good," while not identical with a certain kind of interest in an object, will never actually become the predicate of a value judgment made by any one except when that interest in some object exists? To affirm this is not to be guilty of Psychologismus, is it?

In fact, Miss Clarke is not over confident of her claim that values are ontologically independent of living beings. She finds no instances of moral values that can certainly be shown to be thus independent; she thinks that this may be true of perfect justice (p. 297), although certainly not of unmixed happiness (pp. 246, 295). Religious values, she concedes, can not occur without consciousness (p. 298). Truth may not be a value at all; but so far as it is an intrinsical. trinsic value, its character is always esthetic; and she is disposed to think that only esthetic values are intrinsic (p. 302). (Earlier in the book 1 in the book, however, she agrees with Dewey upon the artificiality of the distinction last the distinction between intrinsic and instrumental values, pp. 241 f.) So the important question becomes, whether there are esthetic values that can be really always. that can be realized except through persons (p. 322). Following Witasek's alegain Witasek's classification, esthetic objects fall into four species: simple sense data (colors and colors and co sense data (colors, sounds, etc.); form; conformity to a type, or "norm"; and orman in the street of "norm"; and expression (p. 316). The first three, she affirms, in contradiction to Alexander, Croce, et al., should not be subsumed under the fourth and alexander. under the fourth; and they "seldom if ever require minds as their media of realization," media of realization" (p. 318). But, the reviewer is disposed to ask, conceding that the chiral street and ask, conceding that objects have form, conformity to type, and primary qualities and in the state of the stat primary qualities, and in these respects are ontologically real, independent of minds door. pendent of minds, does it necessarily follow that they have predicates independent of minds and in these respects are ontologically really predicates independent of minds and in these respects are ontologically really predicates independent of minds and in these respects are ontologically really predicates independent of minds and in these respects are ontologically really predicates independent of minds. predicates independent of minds?

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The great limitation in this kind of realistic interpretation of The great its extreme abstractness and sterility. Few deductions of radue 18 118 can be made from it. No standards can be drawn from it, apparently; not even pragmatic, working standards. We must look apparently, he must look to other theories of value to discover the circumstances under which men actually make judgments of value, and then discover, if we rules to guide them in so doing. Here, perhaps, we can safely em, runes the account of G. E. Moore and Miss Clarke with those Men, we can say, make value judgments only in situations in which choice among ends or means is requisite. Under these circumstances, objects which have interest for men acquire predicates of value. Coördination between conflicting interests can be made at least provisionally, by standards of intensity, preference, and inclusiveness. No one among the contemporary theories of value is adequate. An eclecticism may prove necessary until a more satisfactory synthesis can be developed. We need have no more and no less fear of psychologism than of logicism, of the naturalistic fallacy than of that of hypostatization. We must steer a safe course between all these reefs of fallacy if we can.

WILLIAM KELLEY WRIGHT.

DARTMOUTH COLLEGE.

Les Origines Humaines et l'Evolution de l'Intelligence. EDOUARD LE ROY. Paris: Boivin et Cie. 1928. Pp. vii + 375.

The philosophical doctrine of *Creative Evolution* has no greater and more qualified expounder, in France to-day, than Bergson's successor in the Collège de France, Professor Edouard Le Roy. He is not only a subtle dialectician, but also an erudite scientist; and of this fact his remarkable volume on *The Origins of Humanity* and the Evolution of Mind is undeniable proof.

In this volume, as well as in the preceding one, L'Exigence léaliste et le Fait de l'Evolution, to which this is a sequel, Edouard le Roy undertakes the arduous task of testing Bergson's doctrine of the élan vital, in the crucible of contemporary scientific achievement. "I can not approve," he says, "of the philosopher who is blind to the vanity of science bereft of philosophy" (Preface

It is not necessary to deny the truths discovered by paleontology, archaeology and biology, for example, in order to discern in the both creative and inventive activity. The world is tive of the same phenomenon when envisaged from different points Qualitatively, the universe as it evolves, constantly in-

vents and creates new and higher levels of reality; genetically it is held 't the gold continuous (p. 56). "All too often it is held," the author writes "that the ideas of creation and of evolution are mutually incom. patible; at any rate, that these two ideas limit each other. Nothing can be more false. . . . It is true that science, in its regression from phenomenon to phenomenon along the past, never reaches and never is capable of attaining an absolute beginning: its process of parcelling leaves it in the presence of an inexhaustible reality. This is a simple effect of perspective, however, and authorizes no metaphysical conclusion. It does not follow from this that the thesis of creation meets with any particular difficulties from the point of view of the transformist conception. What the latter requires... is merely that the act of creation be not made into an instantaneous event, revolved once and for all. Every day, on the contrary, we witness the unrolling of this activity, for it traverses and fills the universal duration in the form of an immense continuity, far from making 'things' one by one separately by a parcelling operation in the image of our discourse" (p. 135): Invention, thus defined is simply the "passage from an inferior level to a superior level by an act emanating from the former" (p. 339), much as the point of a cone "emanates" from the successive sections (p. 127), or the "rational" adult from the "irrational" infant (p. 135).

It is necessary to look upon the process of evolution as being es sentially one of a psychical nature, inventing new forms as it goes along. But it requires no great depth of insight to discover that "infra-human life is almost entirely and definitely reduced to mechanized habits, materialized" (p. 2). How, then, are we to come to grips with this psychical principle of invention which seems to be lost forever? One way, and one way only, presents itself to us: study Man himself, Man as Inventor, and then, by analogy, retrospectively, go back to the paleontological past. This is the only efficacious method which can lead to an insight into the mysthe origing of M. Hence the importance of an inquiry into the origins of Man and the development of Mind. This method will not only enlight. not only enlighten us concerning the "mechanism" of the clan vital, of vital invention is concerning the "mechanism" of the clan vital, of vital invention; it will also lead us to the goal of the Philosophy of Creative Fred it. of Creative Evolution, namely, to a definition of "the biological roots of freedom" (p. 3).

One can not help but being struck by the strange fact that the part. Man plays in the Universe is altogether out of proportion to the relatively slight differentiation of his body from a purely morphological point of view. Nothing, morphologically speaking, warrants his predominance on the earth. How is this invasion, this conquest and extension of the "human kingdom" (pp. 12-16).

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plas apparent paradox, to be understood? In order to grasp the significance of this fact, we must postulate the emergence, with real significance of reality: the "Noosphere" enveloping the with the coming of Man, then, something new applies phere." With the coming of Man, then, something new applies process Professor Le Roy calls "hominization."

If we are to succeed in inserting Man into a Universal History of Life—
inhout mutilating the former nor disorganizing the latter, it becomes absointely necessary for us to place him above the lower plane of nature, in a
intely necessary for us to dominate it, but which nevertheless does not
position which enables him to dominate it, but which nevertheless does not
proof him from it; and this amounts to imagining, above the animal biosphere
and continuing it, a human sphere, the sphere of reflection, of conscious and free
irention, of thought strictly speaking, in short, the sphere of mind or
insphere. After which it is necessary to conceive, at the beginning of this
grat new unity, a phenomenon of vital transformation sui generis, affecting
the whole biosphere: Hominization [p. 46].

According to this postulate, Man entertains a dual relationship to Nature. Man is explicable in terms of Nature because he has his biological roots in Nature; but on the other hand, Nature itself can only be understood in terms of Man, because in him Nature has reached its highest expression; in Man Nature expresses and brings to light its latent energies.

This double theme is developed by the author with a remarkable walth of scientific detail. Evolution, to be sure, is an undeniable But the philosopher need not, for this reason, accept it without critical analysis. Upon closer examination it seems to Mon-Le Roy that science, in its present state of development, preants many gaps or "thresholds" in what is supposed to be a coninious process. These gaps, for the Bergsonian, can only be accounted for in terms of vital invention or creation. Although the Meanderthal Man and the Piltdown Man possess certain Simian tails in common, yet it seems to the author that the hypothesis of thind of mutation is quite legitimate. He suggests the possibility the existence of a pre-man. But of this we have no direct proof. the thing, however, is certain, namely, that "in the transition from the transition fr dimal to man, the existence of a 'threshold' permits of no doubt; decisive threshold which remains up to the present inaccessible Mintangible. With paleontology, as far up as it goes, we remain With paleontology, as far up as it goes, a little behind; with archaeology, as low down as it goes, a little

It is only with the "neolithic revolution" and the invention of the scene that homo sapiens comes on the scene. In this connected the several highly interesting passages concerning the description intelligence (pp. 199–207), and the interplay of two tentheses; the technological and the purely reflective. Here again,

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no uniformity is discoverable, such as Louis Weber in his Rythme du Progrès tries to establish. The human mind evolves by leaps and crises, broken by periods of relative stagnation. "Intellectual evolution takes on the same forms as evolution in general" (p. 312).

We ourselves, in the present age, it seems to Professor Le Roy, are living through one of those critical moments in the history of the Universe which are called mutations. He has some very interesting things to say concerning the spiritual significance of our unprecedented technological advances. We are witnessing the birth of a new order of reality. With Christianity, which has not as yet come into its own, the *Homo Spiritualis* is emerging continuing and transcending the *Homo Faber* and *Homo Sapiens* (p. 336).

This volume is certainly an excellent example of what hence forth every plausible attempt to defend Idealism must, in method, be. It shows, also, beyond a doubt, that many a doughty lance, flying the banner of science, may still be broken in the lists for the greater glory of some form of Empirical Idealism or Spiritual Positivism.

M. J. ARONSON.

COLLEGE OF THE CITY OF NEW YORK.

La Pensée Intuitive. Vol. I. Au delà du Discours. Eduard La Roy. Paris: Boivin et Cie. 1929. Pp. vii + 205.

This volume is a highly personal commentary on Bergson's epistemology as expressed particularly in his Introduction to Metaphysics and his Oxford lectures on The Perception of Change.

Science, like common-sense of which it is merely an extension, gives us a distorted view of the world. It is essentially utilitarian in its origin, hence vitiated in its method. Being practical and directed towards action, it is incapable of grasping change in its very mobility. It is doomed to the use of concepts: herein lies its failure; it looks upon concepts as yielding complete knowledge of reality: herein it is pernicious. Concepts, the Bergsonian contractive reminds us, are merely stopping-points in knowledge. Who overlooks this primary fact "is like one who confuses the steps of a staircase with the effort of the man who climbs them; the landings with the action of climbing" (p. 56).

Above scientific discourse (au delà du discours) and completing it, there is a form of thought capable of rectifying what science distorts; capable of enabling us to perceive the flux of reality in its pristine mobility: intuition. No word in the philosophic vocable lary is more ambiguous. The fault, of course, is with those who are not "intuitive" enough to understand what Bergson means

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by "intuition of the immediate." Professor Le Roy undertakes in these two hundred pages to explain it to everybody's satisfaction. The also promises us a second volume on Invention and Verification in which he will undoubtedly try to explain his explanation.

Meanwhile, however, the author insists that there is no unbridgeable gulf between intuition and intellection. The former is impanent in the latter. The most rabid scientist is "intuitive" without knowing it.

It is possible to pass from one point of view to the other without rupture of immanence because no absolute gap separates them, the utilitarian being a part or phrase of the true, a part wherein there silently subsists the virtuality of all the rest. . . So that the mind need but live its own states and acts instead of using them in order to defeat the work of common sense in so far it is artificial, and thus transcend the limited utilitarian point of view, draw aside the veils which had previously hid it from its own view and finally acquire immediate contact with its own fundamental reality [p. 23].

In short, intuition "gives complete satisfaction to all the legitimate requirements of reason" (Preface, p. vi).

If this fact has not been understood it is because of a failure to grasp the real significance of Bergson's category of the "dynamic schema." The dynamic schema is not foreign to concepts or images. On the contrary, it is itself an "idea in movement . . . It is called intuitive simply because it is not conceptual in the narrow and strict sense of the term" (p. 60). Its originality lies in the let that it comes logically, though not necessarily chronologically, before thought. It is the cause of thought. "It is inarticulate in itself, yet it is the very source of all discourse. It is of a prophetic nature and reveals its object as a limit by the movement of thought which leads us to it. It is an internal principle of convergence for Series of successive approximations' (p. 61). What, for example, distinguishes a genuine scholar from merely an erudite person? for the former the facts all interpenetrate with an internal meanwhile for the latter they remain distinct and separate. The Molar, thus, has an intuitive grasp of his science, and the propelling principle which enables him to organize his facts so successfully is a schema. The tilly is precisely what Bergson calls the dynamic schema. dramic schema is "an operating function sui generis" and nowhere is its rôle better illustrated than in scientific invention. have Henri Poincaré's word for it: "By means of logic we prove, intuition is 137). Intuition is Wintuition we invent" (Science et Méthode, p. 137). Intuition is the mished conceptual discourse. But the meaning of intuition. the sonbiate of the sonbiate o hor the sophisticated Bergsonian, it would seem, intuition is ratone sophisticated Bergsonian, it would seem, intuition in mystical. It is only, so to speak, de jure that the intuition of the "immediate" is the starting point, in our present habits of thought; de facto it really marks the end rather than the beginning of the intellectual process (p. 108). The immediate in tuition, says Professor Le Roy, is that which "after discussion and liberating reform, the mind judges to be purely given" (p. 112). In short, to speak figuratively (in dealing with intuition what other means have we?), we must dig downward to attain the "immediate," not go backward.

For Monsieur Le Roy just as for another "revolutionary" philosopher in French history, human thought traverses three stages But for the contemporary philosopher, the order is rather inversed; first comes the stage of reason, then the stage of experience, and finally the stage of intuition (p. 187). They grossly err, then, who see in intuition something less than either reason or experience. For Professor Le Roy it is, on the contrary, a superior form of thought including and transcending these two inferior forms. Although something positive, it can, however, only be obtained in a negative way. Hence the necessity of a process of "purification" such as the great mystics undergo. Paradoxically, this form of thought which is "neither anti-intellectual nor extra-intellectual but trans intellectual" (p. 183) is best exemplified in the mystical orison But among mystics it is necessary to distinguish those who are pathological from those who are normal. Psychologists have in the past, it would seem, been unfair in choosing only the psychopathological cases, neglecting the genuine ones.

This distinction which Professor Le Roy likes to linger upon is very significative. It raises the question, in the present reviewer's mind, whether the "normal" mystic is really a mystic at all; whether intuition reconciled with reason with la raison raisonnant, as the author obviously makes a desperate attempt to do, may still be called intuition? Several footnotes in this volume refer to Lalande's Vocabulary. It leads us to believe that Monsieur Le Roy too feels that much of the misunderstanding arises from the lack of

a rigorous definition of terms.

M. J. ARONSON.

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COLLEGE OF THE CITY OF NEW YORK.

Le Problème de Dieu. Edouard Le Roy. Paris: Artisan du Livit. 5 ème Edition. 1929. Pp. 351.

This volume on the *Problem of God* is composed of two parks. In the first, the distinguished French Catholic Modernist discusses and criticizes the main classical arguments in proof of God's existence: the cosmological and teleological, the moral and the ontological. They do not satisfy our author because they are all contains.

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vo parts discusses d's exist. ontologi. contam. ipated and vitiated by conceptual and analytical bias. Vain must inated and value attempt to define God in stagnant intellectualist terms. remain every the rove a concrete reality; you perceive it. It is not the object of conceptual analysis but of a lived intuition" (p. 81). the object of th The rengious To say the truth, He is not proven, He is experienced, He is lived" (p. 127).

This being the case, Professor Le Roy, in the second part of this book, traces an itinerary, a guided tour, so to speak, leading up to the Godhead in such a way that He will be experienced and used,

not merely known about.

Monsieur Le Roy is fully aware of the fact that to a great extent the religious is intertwined with the social through education and tradition. Yet for him the source of all religious insight is primarily in the individual. "It is not in the things of the outside, it is in the most intimate part of ourselves, that we can attain God, at least initially" (p. 293). And as we look within, as we examine the "immediate data of our consciousness," we discover that our very life implies an élan vital, a moral yearning and striving for something higher and more spiritual. In this implication resides the very affirmation of God, according to our author (p. 293). God is real, in the final analysis because He enables us to express that which in "human life is pregnant with infinity, with eternity . . . " (p. 182). And by the same token God is not a mere idea, but a genuine Person because "God acts upon us like a person—He manilests himself to us by his personalizing function. How then deny that He himself is a Person?" (p. 277).

This book really constitutes the religious "testament" or conlession of one of the foremost contemporary religious philosophers. It may, in a sense, be looked upon as the Bergsonian "Manifesto" in this particular field, which, as is well known, the Founder of the School has not himself cultivated in any specific manner. It is, however, easily conceivable that at the hands of a non-Catholic Bergsonian this whole subject would have received an entirely different treatment contributhe treatment. Such as it is, this volume is an important contribution to the literature of Catholic Modernism and deserves to be placed side by side with the works of Maurice Blondel and Alfred

College of the City of New York.

M. J. Aronson.

#### JOURNALS AND NEW BOOKS

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BULLETIN DE LA SOCIÉTÉ FRANÇAISE DE PHILOSOPHIE. 29º Année, No. 5. Déterminisme et Causalité dans la Physique Contemporaine. Thèse: Louis de Broglie. Discussion: E. Borel, A. Einstein, J. Hadamard, P. Langevin, Xavier Léon, R. Lenoir, E. Le Roy, J. Perrin. Lettres de G. Bénézé, A. Metz.

Joël, Karl: Wandlungen der Weltanschauung. Eine Philosophie geschichte als Geschichtsphilosophie. Lieferung 8 (Band II, Bogen 26–30); Lieferung 9 (Band II, Bogen 31–35). Tübingen: J. C. B. Mohr (Paul Siebeck). 1930. Pp. 401–480; 481–560.

Murchison, Carl, editor: A History of Psychology in Autobiography. Vol. I. (The International University Series in Psychology). James Mark Baldwin, Mary Whiton Calkins, Edouard Claparède, Raymond Dodge, Pierre Janet, Joseph Jastrow, F. Kiesow, William McDougall, Carl Emil Seashore, C. Spearman, William Stern, Carl Stumpf, Howard C. Warren, Theodor Ziehen, H. Zwaardemaker. Worcester: Clark University Press. 1930.

#### NOTES AND NEWS

We have received Part I of Festschrift Th. G. Masaryk zum 80. Geburtstage 7. Marz, 1930, (Bonn: Friedrich Cohen). The contributors to this volume in honor of President Masaryk represent England, Italy, Germany, France, Russia, Czechoslovakia, and the Balkans It is a tribute to the universality of President's Masaryk's genius and to his significant interpretations of western and Russian philosophy. The table of contents is as follows: Dell'esperimento scientifico e di quello metafisico: Antonio Aliotta; Politique et philosophie: Lim Brunschvieg; Was ist das Wort?: Sergius Bulgakow; La grazia el libero arbitrio: Benedetto Croce; Der Realismus und das Euro päertun: Hugo Fischer; Der Zusammenbruch des Utopismus Sergius Hessen; Man and Philosophy: Sidney E. Hooper; Die Philosophie in ihre and Philosophy: Sidney E. Hooper; Die Philosophie in ihre and Philosophy: losophie in ihrem Verhältnisse zu den anderen Hauptgebienten der Kultur: Romie I. I. Kultur: Boris Jakowenko. L'idée de l'homogénéité de la science et les types des cai les types des sciences: W. M. Kozlowski. Zur Frage nach dem "Sinne der Goschieles". Tol. Tol. "Sinne der Geschichte": Oscar Kraus; Die Metaphysik Lee Tol-stojs: Iwan Langel: Evolution: stojs: Iwan Lapschin; Die Lehre Wl. Solowjows von der Evolution:
Nikolaj Losskii, Lint V. Kant: Nikolaj Losskij; L'intelletto e la conoscenza noumenica in E. Kanti-Piero Martinetti; Der Zufall als Bestandteil der Wirklichkeit; Dimiter Michaltschaus in Russian Dimiter Michaltschew; Eurasianism and Europeanism in Russian History: Paul Miliukov. History: Paul Miliukov; Eurasianism and Europeanism in Italian duktion: Branislan Potter das Wesen der mathematischen Emanuel duktion: Branislav Petronievics; Natur und Geschichte: Emantite dieser Radl; "Uebermensch," "übermenschlich" (Zur Geschichte Worte und Begriffe): Dmitrij Tschižewskij.

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## THE JOURNAL OF PHILOSOPHY

THE METHOD OF DEDUCTION AND ITS LIMITATIONS 1

THERE are several logically recognized methods of arriving at knowledge. These may be classified broadly as the inductive, bductive, and speculative methods, all of which are in some sense interdependent. We are concerned here with the deductive or ostulational method. This method operates on a higher level of thought than the descriptive method, a certain amount of finished howledge being presupposed in order to begin in deduction. sence of deduction consists in reasoning validly from premises nonclusions. In a larger sense, the systematic acceptance without proof of any principles to serve as premises for further reasoning is that is meant by deduction. It is thus clear that there is a deductive element in inducive reasoning, if the principle of uniformity is taken into account. A syllogism is an example of a simple deductive unit; and Euclidean geometry is a classical example of a deductive system. A deductive structure in which a few basic Enitions and assumptions are explicitly laid down and from which ther propositions of the system follow logically is the ideal of unpletion toward which all disciplines strive. The deductive thiod, in this sense, is the most advanced and developed method science, and has long been the ideal of philosophy. But the final intification of the premises is a further question, which goes bemere deduction. Deduction is not a self-sufficient method, must make use ultimately of such notions as truth, meaning, reality, which are taken over from realms intrinsically more indamental than formal science. Of the numerous problems which dise in connection with deductive reasoning the most important and question with deductive reasoning the most important question is that of consistency. It is therefore necessary being an account of the nature of deduction in its formal and haterial, aspects, in order to establish the locus of the problem deposition aspects, in order to establish the locus or the process as in the Most of the technical terms that are introduced are Most of the technical terms the technical term In the current literature of logical theory. The term is a logical theory unless stated otherwise. Thus a domain is a continuous of ohiertest. Is used loosely unless stated otherwise. Thus a aomain of objects; a substrate (often called an "interpretation") is holding among them; Notem of objects; a substrate (often called an "interpretation; indeed deductions with certain basic relations holding among them; ind a deductive system is a system of propositions which may be dethe from a set of propositions selected from it to serve as assumptions at the serve as assumptions as the serve as assumptions. 1 Read at the meeting of the American Philosophical Association, Columbia

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tions. These principles, which name the essence of the theory and method of deduction, show both its strength and essential limitations. It is the thesis of this paper that it is possible to construct logic satisfactorily as a formal science and thus avoid paradores but that the "material" presuppositions of formal thought deprive logic of self-sufficiency. It has long been recognized that there are logical limitations to metaphysics, and it is equally true that there are metaphysical limitations to logic.

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#### I

A deductive system consists of propositions in a concrete system, or of propositional functions in a system function. The unit of a concrete system is a proposition, which is an expression in symbols of a judgment. It is impossible to define a judgment without taking into account the system it implies. It may be stated that, generally speaking, judgments always occur in a context, or in the light of a system which is presupposed or co-judged. This is or tainly true of all scientific propositions. It follows, then, that the adequate analysis of judgment is not possible without the study of the logic of systems, and since systems may be formal or material in character, the task of logical analysis must be a double one. A judgment is a meaning which may or may not be asserted, and which is directed toward an objectivity. Through judgment a totality is analysed, and one character is selected from the complex of char acters which make up the totality. In other words, a system of possibilities is presupposed by a judgment. Such a system may be called a substrate. A more or less defined system is always have to a judgment. This holds for such examples as "The tree is green," which presupposes the domain of nature, as well as to mathematical propositions. The limiting case of an individual judition ment which ment which may be expressed by a simple demonstrative may be neglected here, since it is of no significance for deduction. Further more, the acceptance of the acce more, the assertion of a single judgment involves the negation of another judgment (1) another judgment (the complementary judgment). It is thus clear that the adequate and in the state of the sta that the adequate analysis of judgment can not be accomplished without involving the accomplished the strength of the strength without involving the theory of deduction. Let us now turn to the concept of a system of involving the theory of deduction. concept of a system of judgments, which is prior to its constituent parts, or the single judgments.

A formal system consists of a set of connected propositions which may be represented by a set of postulates. Postulate sets at used in deductive reasoning in order to survey all possible deductions, or to enable us to survey the logical structure of propositions. This is done through the successive addition of postulates refer needed. A comparatively small number of propositions stands for

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Jarge system of propositions, in the usual case; and their delarge system that be equal to the whole system. The problem is thus reduced to a finite problem ductive powers thus reduced to a finite problem, which has pragdeduction as prag-deduction as theoretical value and significance. In arithmetic, patic as well as infinite number of propositions is possible; but they ir example, an infinite number postulate set alice. by be represented by a finite postulate set which is potentially pay be represented by the whole system. It is a further function of postulate est to show that the propositions are connected and form a system. It may then be asked whether every system is capable of formal thement; or, in other words, whether every system may be represented by a postulate set. The possibility of such representation may be proved in principle by making use of the concept of a well-ordered dass as a construction. Suppose that a system consisting of a mite or infinite number of propositions is given, and let it be regarded as well ordered. The first proposition may be represented by  $p_1$ ; and let  $p_2$  be the first proposition not derivable formally from  $p_1$  is, then, the first proposition not deducible from  $p_1$  and  $p_2$ ; the To put it generally (this may be done by transfinite induction): Let p, be the first proposition in a well-ordered system which may with be deduced from the preceding propositions  $p_1$ ,  $p_2$ ,  $p_3$ , . . . ; and there may be an infinite number of such propositions preceding it In this manner the propositions up to  $p_{\rm r}$  form a subsystem ie, a subclass of the system of propositions, of which none is deducible from the propositions preceding it, and which are therefore on-deducible among themselves. This subsystem would then be the basis of the system or the postulates, and every other proposito could be deduced from them. It is obvious that there could be infinite number of them. But is the nature of a system such that the propositions may be arranged in two classes, or those that are independent and those that are dependent? If the number of propositions in the basis is finite there is a last proposition, and so they could be proved independent. If the number is infinite, howtrer, there is no last proposition. But it is true that every other proposition must be dependent upon the propositions selected as the basis, Otherwise there would have to be a first proposition which independent upon the proposition which sindependent, which would violate the principle of selection. the postulates in the basis be called P. If there is any proposition If there is any property of the hon-deducit. P, it must follow all of the p's; and it must not he hon-deducit. be non-deducible from them, for otherwise q would belong to the That is to say, if there were any propositions which were bot deducible from the propositions of P, then one of them, q, would be the Qhave to be the first of such a character. According to our conbruction, however, it must then belong to P, for it is held to be a hon-deducible proposition. Therefore every proposition is derivable Therefore every proposition is under the propositions of P, which must be finite if they are to be

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This is illustrated by logical inference. The proposideduced. This is must be deducible from one another in the propositions belonging to P are not deducible from one another in the general examples of inference we make the tions belonging to I are not a supplied of inference we mean that none eral case; but in the usual examples of inference we mean that none of them is deducible from a finite number of other proposition of them is deductive. The extreme case in which P may be equal to the system S may be noted, that is, the case in which there may be as many postulates as there are propositions in the system.

It is thus clear that every system S contains a subsystem P which is such that all of the other propositions of S may be deduced from P. No claim may be made to complete or absolute independence for the postulates, as the concept of a well-ordered system is presupposed; but it is reduced to somewhat more ultimate terms. In this manner the principle of a postulate set is introduced in the light of the whole system. Although P is the basis of the system if is not complete in the same sense that S is, for the deducible propositions are not contained explicitly in it. When those are added & is obtained. P is complete as a postulate set, but is not a complete system. In order to make it complete all of the other propositions of S must be added.

It has been stated that postulate sets are usually finite. They must be finite if they are to be useful. But may there not be systems which are not representable by a finite number of postulates? Perhaps the possible system which comprises all possible postulate sets is an exception. The possibility of an infinite postulate set proves that an infinite number of propositions can not always be referred back to a finite set. This raises an interesting question, which we do no more than point out at this time.

By a formal system is meant a totality of propositions among which logical relations hold, which are consistent among themselve, and which are deducible in part from one another. systems from which all of the other propositions may be derived and these partial systems, as we know them, may be finite. The domain of elements might also be finite, but there could be an infinite number of finite number of propositions about them (this is similar to the case of the letters of the of the letters of the alphabet). Thus there could be a finite number of of elements in a domain of arithmetic, and a finite number of postulates. But the number of possible propositions would be infinite. Another are number of possible propositions with finite. Another case is that of the Boolean algebra of logic, with two or four elements, a small number of postulates, from five to tell in number, and on it is small number of postulates, from five to tell in number. in number, and an infinite number of propositions. Such a system is constituted by the is constituted by the propositions which are valid or "true" in the there is a postulate the propositions which are valid or "true" is a postulate the proposition in the proposition in the proposition is a postulate the proposition in the proposition in the proposition is a postulate the proposition in the proposition in the proposition in the proposition is a postulate the proposition in the If there is a postulate set, then those propositions which may be derived from it logical. derived from it logically are valid. If, however, no postulate set is determined, or if the is determined, or if there is an infinite number of postulates, the logically derived proposition This presents logically derived propositions are valid nevertheless.

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a more general standpoint, for a system does not have to be regarded as defined by postulates. "Belonging to a system" is a fundamental property, and that may be defined conceptually, so that further criterion is not needed.

II

The central problem of deduction may now be formulated. is (a) to represent a situation described by a system of propositions by means of postulates which are consistent, which requires (b) the construction of logic so that paradoxes or contradictions are elimimated. Consistency is here to be distinguished from freedom from contradiction. By consistency is meant the realisation of a system in a field of objects; whereas contradictions may occur formally in the deductions of a system. Contradictions can occur only in the ame system, it must be emphasized. Propositions do not contradictione another by themselves (in fact, they can not be "by themselves"); they may do so only when applied to the same system. On the other hand, two propositions are consistent when there is a subtrate in which both of them may be realised. Two propositions for which that is impossible are called inconsistent, with respect to a given system. Consistency is thus the goal and the essential thing, and not "freedom from contradiction," which is usually stressed and which is purely formal. We may not be able to exhibit the necessary substrate. In that case the question is merely undeeided. A substrate must itself be free from contradiction. If a contradiction can be shown to occur in the assumptions of a subtate we know that the system which may be realised in it is incon-But if that can not be done, nor a substrate be exhibited, the matter is simply undecided. It is not yet known whether Peano's postulates for arithmetic are consistent. A possible proof the basis of Sheffer's logical analysis that contradictions can not be deduced would not prove that there is a substrate. What a substrate would not prove that there is a substrate. would not prove that there is a substrate.

Peano's postulates would look like presents a very diffi-

A substrate is a domain of objects or "things" in which a set of principles of contradiction and excluded middle, so that every relatived logically from them by composition, as conjunction, distinction, etc., are also determined. That is to say, the basic and so fundamental importance for the principle of excluded middle in a substrate, it also their definition. If a complete postulate set is realised of the propositions that can be derived from it. In order to

realise a system, therefore, one needs only to realise a complete postulate set, which means that it is complete for a given system, whether finite or infinite.

In the construction of a system, classes, or relations with one variable are taken to designate a domain of objects. It is better to speak of a domain to begin with, classes being always formed within a domain, in the schematism of a deductive system. Therefore, in describing the fundamental concepts of a system, we should speak of a domain of objects and relations, which are followed by the postulates and theorems. In order to show that the postulates are consistent, substrates must be possible for their realisation. A simple illustration of a substrate in formal science may be given Take the two elements 0 and 1, connected by the two basic relations "plus" and "times." Every equation between the elements may then be determined, as follows: 0+0=0; 0+1=1+0=1: 1+1=0;  $0\times0=0\times1=1\times0=0$ ;  $1\times1=1$ . This is an example of a mathematical substrate because every equation of the form x + y = z, and every equation of the form  $x \times y = z$  is decided in the system—i.e., holds or does not hold, if x, y, and z equal 0 or 1. Further propositions can be derived from the basic propositions, which may be regarded as independent assumptions, through combining them by addition, etc. A postulate set may then be realised in this substrate through interpretation. The equation y=z+1, which expresses the relation of "successor," involves in finitely many basic relations, since for every number z there is a number y such that y = z + 1. These form a system which is consistent or inconsistent. The principle of excluded middle does not have to hold in every system, as is shown by the existence of in complete systems, but it must hold in a substrate. is the goal and not the presupposition of a formal system, an order of procedure which is illustrated by mathematical reasoning. thermore, since the principle of contradiction also enters into the definition of substrates, a formal system may be proved consistent if by the addition of substrates and system may be proved consistent in the consistent in if by the addition of further propositions, which may be infinite in number, it can be made to be a substrate. Thus a substrate may be contain more new may be contain more propositions than the system, for propositions may be added to the system. added to the system.

Substrates may be regarded as more or less ordered domains of objects, a domain being a minimally ordered substrate. A domain consists of elements which have in common only the fact that certain propositional functions are meaningful in it. If "x is green is asserted, x must be a colored object, the domain in this case being for example, "visual objects." The propositional function mortal" refers to organisms as the domain. The "original" domains are not classes, because they are not defined by propositional

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fuctions; nor are they definable by them, since they form the functions; for propositional functions. The objects of domains are foundation for possible propositions, "objects" being construed in a the objects of Francisco Classes may be separated out by propositional most general so that the elements for which a propositional function is true belong to a class. The classes are thus subdomains, the doposited as original and the classes being derived. Since all mathematical propositions are based on propositional functhey presuppose domains. The domains have a formal significance in mathematics, and do not have to be founded factually. In such domains there are relations with any number of variables which vield true propositions for some complexes and false propositions for other complexes—complexes, that is to say, of one, two, three or more elements, according to the nature of the relations.

Substrates interest us particularly when they satisfy a postulate st but they do not have to presuppose postulate sets—i.e., they are not bound up uniquely with any particular postulate sets. A postulate set first has meaning in the sense of objective reference when it refers to substrates which satisfy it. A postulate set may indeed have meaning by itself, in the sense of formal meaning or iom without content, but it can have no objective meaning without substrates. On the other hand, a substrate has such meaning by itself. As has been stated, the consistency of a system is established ly its realisation in a substrate. If no substrate is shown to realise system the question concerning its consistency is open. tase the system is not known to be significant or fruitful.

It might be suggested that the impossibility of realisation in a abstrate can be inferred from the presence of a contradiction in a Joseph In other words, could a substrate realise a self-contradicfor system? This question leads to the root of the general concept of consistency, which is based on the principle of "positing" domains and substrates for which the principle of contradiction must light substrates for which the principle of contractions can not be realised in a substrate for which the principle of contractions can not be realised in a substrate for which the principle of the real world. is a substrate. Applied to the possible substrate of the real world, this amounts to the metaphysical assumption that reality is free tom contract. to the metaphysical assumption that realisation of istency is given therewith, for it can be used for the realisation of lostulate sets. Nevertheless this presents an acute problem in The existence of Nevertheless this presents an acute production of the case of infinite domains. The existence of the hasis of arithmeaniminite domain is a presupposition which is at the basis of arithmetic, and it is a contradictic; and it is assumed that such an aggregate is free from contradic-As far as our present knowledge is concerned we must speak 10f. Russell, Introduction to Mathematical Philosophy, p. 77, in which the there is that there is the state of infinite collections, but 10f. Russell, Introduction to Mathematical Philosophy, p. 77, in which there is no evidence for the existence of infinite collections, but the assumption that there are that there is no evidence for the existence of infinite collections, in the collections i Maite is it impossible that they exist. The assumption in the world is called the "axiom of infinity."

of such domains as "posited." But we may hold a system to be of such domains as promoting it; or we may posit it free from contradiction without positing it; or we may posit it without knowing that it is free from contradiction. In formal science "existence" means a property within a system, the property of "being posited" or positionality. In arithmetic the numbers arise in this manner, and have no existence but that in the system When we set up a postulate set we posit a substrate which satisfies it and which has existence only in that system. The concept of existence may not be referred back to that of freedom from contradiction; we can only say that the freedom from contradiction has been presupposed. Only finite domains can be displayed empirically, Hence no arithmetic is possible as an infinite system without ideal positing. The problem is not solved by demonstrating the realisation of one mathematical system in terms of another, as Hilbert has done, for the latter is itself positional in character. The expression "there is" in mathematics usually means that one draws on the traditionally accepted analysis and makes use of former assumptions.

In mathematics the assumption of transfinite domains is as unavoidable as it is ultimate. The concept of a limit in modern analysis involves the idea of infinity as an unlimited process, which, however, presupposes a real infinite. If there were only a finite domain of numbers no number could grow without limit, so that actual in finites must be presupposed, within which unlimited growth or diminution can occur. Consider the case of 1/n as n approaches infinity, or suppose that n be allowed to grow so that 1/n is smaller than any number. If there were a largest n, then 1/n could not be diminished without limit. Therefore the latter concept presup poses an actual infinite, in order to give the process meaning. This is the best is the best and most natural foundation for an actual infinite domain It may be said that every mathematical proposition which is not trivial reference to the said that every mathematical proposition which is not trivial reference to the said that every mathematical proposition which is not trivial reference to the said that every mathematical proposition which is not trivial reference to the said that every mathematical proposition which is not trivial reference to the said that every mathematical proposition which is not trivial reference to the said that every mathematical proposition which is not trivial reference to the said that every mathematical proposition which is not trivial reference to the said that every mathematical proposition which is not trivial reference to the said that every mathematical proposition which is not trivial reference to the said that every mathematical proposition which is not trivial reference to the said that every mathematical proposition which is not trivial reference to the said that trivial refers in the last analysis to infinite domains. Mathematics in this sense, is the doctrine of infinity. We construct one system of arithmetic on the basis of an unlimited number series, without exceptions, and from which all properties of finite systems can be derived. It the derived. It then has scientific character. Infinite domains are only given through special assumptions and can not be realised adequately. quately.

III

Freedom from contradiction is an essential requirement of logical technical requirement of logical techniques of the makes necessary to t which makes necessary the elimination of the alleged paradoxes of logic. It can be shown the logic. It can be shown that they may be disposed of in the light of the theory of deduct: of the theory of deduction that has been sketched. The term tinomy" should be used to tinomy" should be used to refer to propositions that are apparently contradictory—i.e. to are contradictory—i.e., to apparent contradictions of fundamental logi-

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al principles. The term also implies that we are not yet clear cal principles. Consider, for example, Russell's antinomy of the class about them. which do not include themselves.3 To which class does of all classes which he a member of itself of all classes ... It can not be a member of itself; nor can it exclude that belong? It can not be a member of itself; nor can it exclude that Delong. It exclude that Zermelo, in his "Grundlagen der Mengenlehre," 4 set himgf the problem of so constructing the theory of classes that such entradictions will not occur. He argues that classes should never defined "independently," but always in a domain in which they have meaning. The domain may be the class of all classes, but it is not a class itself; and it should not be confused with its elements, which are classes in this case. The domain is divided into two parts by means of the character "classes not including themselves," and these parts do not belong to the domain as elements, for they are not classes. By means of the principle that "Every class M has at least one subclass M' which is not an element of M'' Russell's antinomy is obviated.

Since such paradoxes arise because of inadequate technical analysis or because of confusion concerning the fundamental concepts of logic, it is possible to free logic from them by a thoroughgoing examination of its foundations. It is thus possible to construct logic satisfactorily as a deductive structure. Important though that be as a formal achievement, we are more interested in the application of logic to the real world, which does in fact exemplity logical relations and structures. Mathematics and mathematial logic are studies of the structure of systems, whereas other sciences, such as physics, are interested primarily in their content, the nature of the facts being essential. Mathematics deals with inration structures and ideal entities, which presuppose infinite do-But in reality there are no such general objects as lines, points, etc., any more than there are abstract cows; and all transfithe domains are hypothetical in character. Thus it appears that in formal logic we are doubly removed from the world of experience. Por, firstly, there are the limitations of the deductive method which the set by the operation of "positing," since postulates as formal structures must be realised in a field of objects which are never given". given" except in finite situations; and secondly, the so-called world finature is itself a construction, with its own peculiar assumptions of transcendence and objectivity.

In order to explain the world of experience it seems necessary to introduce principles which transcend it, and therefore logic must book infinite domains which are free from contradiction. This is biformity of not the method of deduction as the principle of the biformity of nature is to the method of induction. This principle of nature is to the method of induction.

Whitehead and Russell, Principia Mathematica, Vol. 1, p. 63, 1st ed.

is also important as a regulative idea, and is useful in the development of deductive method. But nothing follows from it metaphysically, except possibly a provisional philosophy of pluralism corresponding to the multiplicity of domains. A monistic theory could only be set up if the invariant of all possible domains could be established and described by the invariant of all possible systems. It is to be doubted whether this is possible as a formal or technical feat, let alone as a theory of reality. This view is opposed to the standpoint of Bradley, who analyzes judgment as such as a characterisation of one "Reality," which is assumed as the domain. Even granting that to be the goal it must be recognized that it is still a problem, and quite an open one.

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The material assumptions of logic may be viewed in the light of the concept of transcendence. All reaching out beyond the imme diate specious present furnishes examples of transcendence. The theory of the infinitude of space and time is a further extension of this insight, the factual basis for such transcendence being found in the characters of retention (retaining from the past), protention (anticipating the future), and presupposition (involving a field of objects), which are attached to all experience. Our beliefs in the continued or permanent existence of a real world, or even in its independent existence, are examples of such material assumptions of transcendence. In actual practice we exercise "animal faith" in the independent existence of nature, and, in our logical thinking we have "rational faith" in the existence of trans-experiential do mains, as also in the absolute validity of the logical processes of in ference. All beliefs in the existence of fixed domains or of "eternal" objects are cases of rational faith. It is true that the assumption of animal faith "works" for empirical life. Does the assumption of rational faith work similarly for the rational life It does not in its entirety, for, although it furnishes us with the permanence we desire as a principle of explanation, we also desire adequate proof of all principles. In other words, the demands of reason are greater than those of practice. This is a difficulty resulting from the latitude of practice. ing from the logical situation involved by the speculative of degree matic assertion. matic assertion of existence. The claims that necessity, permanence, etc., are established assertion involved by the specularity etc., are established assertion involved by the specularity etc., are established assertion involved by the specularity etc., are established assertion of existence. etc., are established by means of essential analysis or insight are not verifiable empirically verifiable empirically; and any other kind of rational, non-temporal verification does not a second control of the control of verification does not suffice for a temporal world.

A final word may be said about the error of the "self-sufficient" cation or objective meaning is an abstraction, a purely forms

<sup>5</sup> Cf. Bradley, Principles of Logic, Vol. 1, 2nd ed., for his discussion of the laws of identity, contradiction, and excluded middle, in which a modification which a modification is imposed on the structure of logic.

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structure. Its minimal indication would be itself as a symbol. structure. The knowledge resulting from such an analysis is very thin formal knowleds are guarantee whatsoever of objective reality, which indeed, and gridled from it in principle. This error has been comnust be discussed in his use of the phenommiled by method, which deals with events of pure consciousness. The meaningful judgments of pure consciousness are treated by themselves, and the objective world is then regarded as their correlate. If by pure consciousness actual consciousness is meant, then the world is a limited world of actual correlates and requires the usual material assumptions in order to make possible the foundation of wience and knowledge. That is, if it is to yield more than mere selfmowledge. It must even then be observed that the phenomenologist has had the advantage of observing an external world to begin with. The advantages of the alleged absolute certainty of the materials of pure consciousness and the claim of this method to enable us to begin presuppositionlessly are given up therewith. It is unnecessary to point out that the assumption of an absolute consciousness merely adds one more difficulty to the problem. That we can not reason without making assumptions may be called the "logic-centric predicament." It must be emphasized, however, that no metaphysical capital should be made out of what is virtually a predicament. logic must make assumptions, both formal and material, and the latter may be treated as regulative ideas which are either gradually verified or modified in experience. More than that can not be said if we are not to leave the world of facts for one of fancy.

MARVIN FARBER.

UNIVERSITY OF BUFFALO.

### THE DEFINITION OF YELLOW AND OF GOOD

DRIOR to all specific questions of ethical philosophy is the question whether there can be an ethical philosophy at all, whether the subject-matter of ethics is in its nature susceptible of scientific or systematic treatment. The threat to isolate ethics from the natural formed of fact and concept takes various related forms. This I am have the denial that "the ought can be derived from the is." This I am here not immediately concerned with. Another form is the assertion that Another not immediately concerned with. Another concerned with an ultimate imple quality good, the object of ethical inquiry, is "an ultimate on indefinable." I that good, the object of ethical inquiry, is an believe that the 'unanalyzable,' sui generis, and indefinable. believe that the question here involved still represents a living issue of the question here involved still represents a name of the question of the q of the question of the definability of qualities in general, with especial methods to the definability of qualities in general, with especial Reference to the definability of qualities in general, with especially the program of naturalism and naturalistic and realistic

The standard citation for the indefinability of the predicate god is to Mr. G. E. Moore's Principia Ethica. According to this view the character good is a simple ineffable quality "like the color yellow." The implication of this view is that such a quality, some how recognizable in the raw immediate experience of its instances is indefinable, and not to be analyzed or translated to conceptual generalization or systematized in a natural science. Although Mr. Moore, for example, really permits himself rather more ratiocination on the topic than the statement of this principle seems to warrant. he tries to limit his ethical study to an unassuming inventory of the things which present this ineffable quality.

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One proposed method of meeting this objection is to deny that good is anything so crass as a mere quality.1 For the purposes of this paper, however, I shall maintain what is to me obvious, that the good, as experienced at least, is, or has, a quality. And just this general question of the relation of qualities to their conceptual determination and definition will bear the brunt of my argument. I shall first examine briefly the extent to which any simple experienced quality, yellow, for instance, is really unamenable to definition and adequate scientific and conceptual treatment. Then I shall subject the quality good to a parallel examination. I think that it will appear that the quality yellow can be and actually is being as satisfactorily and systematically defined as anything possibly could be which is not itself a mere definition (as some logical entities may be). I think that it will appear, too, that there is good reason to believe that the quality good is capable of essentially the same scientific modes of definition. If good does offer discouraging difficulties to philosophical formulation, these difficulties do not occur in those points where it is a "simple quality like yellow," but where it is conceptually or scientifically more complex.

Although the foregoing will indicate that I take my text and point of departure from a famous doctrine of a famous work, my remarks are primarily intended, not to display any truculence toward Mr. Moore or anybody else, but rather as what I hope is a constructive suggestion for the ethics of naturalism and realism.

Now, there is one fundamental and inescapable peculiarity of scious experience. conscious experience which can account in large measure for the plausibility of the doct. plausibility of the doctrine of indefinables. This peculiarity will be referred to below as referred to below as part of the difficulty of the problem of the relation of experienced lation of experienced qualities to their "objective physical conditions." It is connected unit tions." It is connected ambiguously with the problems of units and multiplicity "minds and multiplicity, "whole and part," and primary and secondary qualities. Without true qualities. Without trying to solve these problems, we can name the

<sup>1</sup> J. Solomons, "Is the Conception of 'Good' Indefinable?", Proceedings of the Aristotelian Society, 1905-1906.

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peopliarity very broadly, thus: every article or complex in our conpeculiarity very does have a sort of sensuous and unique wholespect, appears as an immediate quale, sensum, datum. Geometrical shapes as experienced have this total "raw feel." 2 shapes as taped and some shapes as taped and some of his successors have remarked on "the integral aspect," not only of his successful and rotundity, for instance, but also of objects whose apprehension the traditional psychology declares to be far more apprentiate tragic, the comic, the wholesome, the horrible, and so on. Qualitative immediacies of the foregoing sorts can be analyzed directly within experience. They are experientially complex. On the other hand, so-called "simple qualities," such as yellow, are those which can not be analyzed directly within experience. They appear, that is, to possess only the whole-aspect, and are customarily analyzed and explained indirectly, by reference to more or less hypothetical constituents or correlates.

Everything in heaven or on earth, at least as it comes to consciousness, can have this total mass, this sensuous qualitative integrity. Concerning the experienced quale as just this unitary datum (whatever may be its relations to its apparent parts, and whether our epistemology decides it is an integral whole-aspect of a real physical structure, or only an idea or essence correlated with a structure which is itself unexperienced) almost nothing can be said. The slightest attempt to analyze the most complex of such presentations mars its glassy surface, changes it to something else. The ratiocination and symbolization of the philosopher must be still more ruinous of its pristine, perfect flavor.

I shall claim, therefore, that an analytical and definitive science is inevitably inadequate to the only world which we experience, if We demand, for its adequacy, that its analyses embalm and contain the whole sensuous tang of their object. The formula for yellowness an not be yellow, nor can the formula for goodness reek with the very incense of the good. The formulæ of science are a peculiarly abstract and colorless sort of symbolic transliteration; herein consists their value. On the other hand, I believe, just because this predicament is universal, it may be abstracted from. It justifies no invidious exceptions in behalf of the qualities yellow and good, and it is cancelled out, as an objection to the scientific program either physics. of physics or of ethics, by the obvious fact of the success and belevance of soil bowever indirect The state of the second science in its dealings with the world, however indirect of ultimate the second science in its dealings with the world, however indirect Our ultimate theory may assert these dealings to be.

These elementary stipulations really contain the kernel of my atgument. On the grounds thus adopted, the following pages will attempt a more precise explication, and an appraisal of the special orrow an expressive phrase of Professor E. C. Tolman.

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Now, it is not entirely clear just what definition shall consist in To define an entity to someone may mean simply to make him under. stand what it is, so that he knows what you mean when you mention It is doubtful if anyone seriously asserts that the quality good is impossible of this sort of definition. The important sense of "definition," and the one intended here, consists in an articulation of the matter defined with the body of conceptual and experimental knowledge.

In order to cover a maximum of ground at the expense of a minimum of verbiage, we may accept a valuable schema for an inquiry regarding definition from Mr. W. E. Johnson's Logic.3 First primarily of words, he recognizes (1) "ostensive definition" and (2) "bi-verbal definition." 4

- (1) Ostensive definition consists in an introduction of the object itself, with the pronunciation of its name so that the connection is recognized by the person to benefit from the definition. "Yellow" surely has no peculiar incapacity for this kind of definition.
- (2) Bi-verbal definition consists in a statement that a certain word or set of words is to be used as an equivalent for another. Its formula is "x means what is meant by y." To take our example, "yellow" means what is meant by "gelb," "jaune," "the color be tween orange and green;" "lemon," "topaz," "saffron," "straw," "primrose," "chrome," "gold," "ochre." (That our language is here comparatively poor in exact synonyms is quite fortuitous and unimportant to our purpose.) Both ostensive definition and biverbal definition are admittedly of the sort designed chiefly to make one's interlocutor aware of what one is talking about, and are primarily applicable only to words, as words, but in so far as a science is only une langue bien faite, philosophical importance belongs even to these varieties of definition.

Scientifically more significant, however, are (3) synthetic defini-

tion, and (4) analytic definition.

(3) "In synthetic definition we exhibit the nature of what is simple, not by representing it as a complex, but by bringing it into synthetic connection: synthetic connection in a complex of which it is a component.

Ope is plain that the color yellow is capable of this definition.

may define vellow by the state of this definition. may define yellow by its position in the color-pyramid, by its activity and psychological process of its of and psychological properties, or by the general conditions of its of currence in nature or actions of its of the general conditions of its of currence in nature or actions or actio currence in nature or art. There not only could be, but is, an extensive and successful. tensive and successful science of yellow, defining it synthetically

4 Op. cit., esp. pp. 94 and 90. 5 Op. cit., p. 108.

<sup>&</sup>lt;sup>8</sup> W. E. Johnson, Logic, Pt. I, Cambridge, 1921.

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by ascribing the laws of its appearances and effects, where one may appear to find it, how one is to make it, and what one can do with it. It is a status of the color yellow is quite like that of any in fact, the status of the experienced world which science essays to define, other feature of the experienced world which science essays to define, describe, and explain, and it happens particularly that in just this sphere of light and color, science has been signally successful in laying bare a rigid and rational system of truth.

(4) "In analytic definition we pass from an unanalyzed—i.e., an apparently simple—to an analyzed equivalent." Mr. Johnson does not believe that analysis is essential to definition, and claims the synthetic nature of the definition of the symbolic entities in logical and mathematical systems, that realm of definition and of conceptual order par excellence, in his support. And that the scientific demands on the process of definition, and especially the demand for the definition of yellow, can be beautifully satisfied by synthetic definition, I have indicated in the preceding paragraph. But if there is any justification for the contention of the indefinability of a "bare quality like yellow or good," it must rest in the assumption of its unanalyzability.

Here we are face to face with the fact, which was anticipated in the preliminary discussion, that the name of a quality, such as "yellow," is employed with such an ambiguity that it is singularly difficult to come to grips with the realities involved in a question of the quality's definition. Assuming that by "yellow" we do not mean merely the word, one can still inquire whether we mean the psychic process of the color's apprehension, the "physical correlates" of this apprehension (i.e., its conditions in the physical object, if there is any), the "physiological correlates" (its conditions in the perceiving organism, if there is any), the relations of any two or all of these sets of conditions, or the bare quale or "essence" which is the quality philosophical or scientific question merges inevitably with the vexing lies, which is integral with the cardinal metaphysical and epistemolism, object.

Without a definite answer to these questions, it is far from certain that there is any sense at all in which even the color yellow is it it is indefinable, and it is my purpose to assert that ignificance and one which is not peculiar to yellow. The world of this world, they are in some unimpugnably valid sense analyses, diffused, of "simple qualities like yellow." It is hardly

conceivable, whatever one's metaphysical predilections, that a higher degree of scientific relevance can anywhere be demanded or supplied

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If we grant the opinion of Professor Holt and Professor 4 exander, for instance, that the experienced color yellow is idenexander, 101 instance, tical with what are usually termed its "physical correlates" (the opinion which, on the whole, I should incline to adopt), or that of Mr. Russell, that the color is identical with what are termed in "physiological correlates" (this is at least one way of interpreting his current doctrine, as it appears in Philosophy and The Analysis of Matter), we grant thereby that the physicist's analyses of matter and of energy, down to the latest chronogeometries of the relativists, are nothing more or less than very complete and systematic analysis or analytic definitions, of such facts as the color yellow, and that there is already a very great deal known about the analysis of this simple fact in particular.

Now, it happens that those who deny the definability of "simple qualities such as the color yellow" are likely to be subscribers to a highly special doctrine of the status of qualities-the "sensa" or "essence" theory, by which the qualia are simply the bare adjectival identities which they are presented as, all of a piece, space less, timeless universals.7 This theory need not be argued here Suffice it that it, too, gives to yellow the same status it gives to all the other content of experience, and at the logical extreme to which Mr. Santayana, e.g., develops it, it must deny that even the appar ently most complex presentation can truly be analyzed. (For the complex is all one essence, and a different essence from those constituting the result of the analysis.) And all these essences, at any rate, the theory holds to be impotent epiphenomena, effective only is "signs" to conscious creatures. This means that they are rationally rooted and inevitable epiphenomena, which can serve as intelligible indications of the physical, divisible, measurable entities with which they are universally and uniformly "correlated." The scientific consequence of the scientific co consequence of this theory, then, is once more a virtual identification of the quale and its correlates. If one stands fast to the letter of the doctrine, nothing in the world of experience is any better and doctrine. lyzable and definable than a simple color-quality like yellow; while if one admits that in scientific practice, the things of experience (all of which are sense and a simple color-quality like yellow, of which are sensa or essences, by the theory) are indirectly but infallibly analyzable and researches, the theory are indirectly but in fallibly analyzable and researches. fallibly analyzable and definable in terms of their correlates, the capacity belongs. this capacity belongs a fortiori to so familiar and simple a fact so the color yellow.

The reader will easily see the extent to which parallel considers

7 If the details of this characterization of a doctrine with so many is rieties and ramifications were more relevant to the discussion, it would not some modification. I neglect the some modification. I neglect the polemic issues involved.

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tions apply to the opinion that an experienced color is purely an article of psychic content. If the color "yellow" is only psychic, article of psychic content in the experienced world, and for all practical so is every element in the experienced by identifying the color and all scientific purposes we must proceed by identifying the color with those systematic "physical correlates" (whatever their ultimate metaphysical status) which alone allow us to understand and control them. I shall not complicate the argument by trying to take advantage of the theory of "psychic elements," according to which purely psychic data are analyzable in their own right.

(5) In all of this, it may be asked, what has become of that definition per genus et differentiam, which is the only kind that many of the school-room logics testify to? As a mode of definition, it is only fleetingly mentioned by Mr. Johnson, who relegates it principally to his doctrine of classification, in his chapter on the determinable.

Now, Mr. Johnson remarks that this traditional mode of definition is devised chiefly to deal with substantives and not with adjectives. It might be said, therefore, that the quality yellow is, in this regard, neither definable nor indefinable, since it is an instrument and not an object of definition. By its indefinability here, however, may be meant that yellow is one of the multitude of those simplest adjectives into which can be resolved the indefinite number of complex adjectives (let us say, for example, the character which constitutes being a yellow-and-fragrant flower) which characterize the indefinite number of "places" in a classificatory scheme; and that these simple adjectives themselves are an eternal arbitrary number, disjunct and incommensurable.

I can scarcely conceive the possibility of the world's comprising ach arbitrary and fragmentary ingredients. At any rate, it is empirically plain that the world does not comprise them. A large part of physical and physiological science consists in a rational ordering of just these apparently simple qualities, an ordering which depends pon equating them with a rigid system of complex conditions or definition per torrelates. So far as the classificatory process, and definition per Menus et differentiam, survives at all as an aim of modern science, the process owes its importance to an empirically justified assurance hat certain such schematizations represent, or will assist in discovering, a "real", ting, a "real" structural relationship and continuity of the defining structural relationship and continued sign, i.i., p. 103. In adopting Mr. Johnson's scheme to assist this dis-Cusion, I in no wise mean to imply that Mr. Johnson would agree with my distance or conclusion. algument or conclusions. Indeed, he says, for instance: "Ultimately a simple dietive name—such as red—cannot be defined analytically but only ostenliggistant thesis (which I doubt), he incurs the general criticism which these lages are designed to afford. Op. cit., Chap. XI, pp. 173-185.

adjectives. That is, the schematizations are designed to epitomize the kind of order and commensurability which we have treated of as providing synthetic and analytic definitions.

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That a simple quality like the color yellow is definable and susceptible to scientific treatment in the only senses in which a scientist can legitimately be interested in defining it, I consider to be established by the foregoing. The only peculiar question involved is that of the status of qualities in the natural world, and this is not peculiar to yellow. Now, the persons who deny the definability of the quality good have compared it to the quality yellow because they thought the indefinability of the latter was especially obvious I have treated first of the quality yellow from directly the contrary opinion, namely, that in some respects the definability of the quality yellow is especially obvious. I agree, however, that the task of the definition of the quality good is probably essentially the same sort of task as that of the definition of the quality yellow. I shall rapidly indicate, therefore, the directions in which the methods and conclusions of the preceding paragraphs are applicable to the definition of the quality good.

(1) That the quality good is susceptible of ostensive definition, that it can be recognized and pointed out, is something of which many of the opponents of naturalism are most certain. This particular certitude I consider hardly justified by human experience, but the sensuous immediate recognizability of an entity has little to do with its systematic status in a science, one way or the other

(2) A bi-verbal definition of "good" may be a trivial translation into other words ("gut," "bon," "ethically or axiologically positive") or a more or less important resolve to use the word always in a certain systematic context, to mean the same as certain other combinations of words. Since such a resolve would usually be motivated by an experimental conviction that such a scheme less fits the world, it may verge on a respectable ethical or metaphysical theory.

(3) The synthetic definition of the quality good, in so far as it is other than the verbal resolve just touched on, is a large part of that very difficult science of the good whose attempt I would justify. Even though we now lack a final solution of that science's problems, so long as we grant the empirical recognizability of such a quality as good, we can hardly escape acknowledging the theoretical practicability, cognate with that of the other enterprises of science of a discipline which would determine the conditions of the quality's occurrence, its relation to other qualities, its relations to natural processes, what it does, and how it is made. The science of color can teach us how to make things yellow (for instance).

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of morality will make a solid and admirable contribution when it can teach us how to make things good. Unfortunately, the quality teat teach us how to make things good. Unfortunately, the quality food, instead of being precisely like the color yellow in respect of this amenability to scientific treatment, promises to be somewhat more recalcitrant and recondite. This difficulty, however, affords no reason at all to doubt the quality's essential susceptibility to the treatment as such.

(4) Subject to the same conditions which complicate the question of the analysis of any experienced quality, as I have noted them in regard to the analysis of the color yellow, it is prima facie entirely practicable to devise an analysis, and so an analytic definition, of the quality good. This likewise is a large share of the task of the moot science of ethics itself. My own opinion is that of late years a great deal of valuable work has been done toward this analysis. Certainly no important evidence has appeared to justify the denial to the quality good that natural status, consisting either in inevitable correlation with or in identity with certain natural physical structures, which is ascribed, for instance, to the color yellow. And these interior structures discovered for good, like the structures discovered for yellow, must be continuous and articulated with, and explain and be explained by, that ulterior structure, that system of situations and conditions, which was considered under the topic of synthetic definition. We must notice, however, that in supposing that the quality good will prove to be experientially simple "like the quality yellow," we are doing considerable violence to the appearances, for the sake of an extreme instance. It is quite likely that the quality good may prove to be the whole-quale of a structhre whose significant elements are immediately discernible in experience, so that resort to unexperiencible constituents or correlates be unnecessary for its definition and analysis. In this sense only are experientially complex qualities more readily analyzable than experientially simple qualities.

(5) Good, like yellow, is an adjective, and hardly amenable to the traditional method of definition per genus et differentiam. We have already found our warrant, however, for assuming that place in the system of adjectives defining a scientific scheme of classication. This place would be determined by, and be important belongly of the investigations touched on in the foregoing paragraphs. It is quality good does not at all justify a suspicion that it is the practically and systematically as the quality yellow, and systematically as the quality yellow, a vertebrate, or that of an electro-magnet. Cer-

tainly, whatever difficulties confront this program are not the aspects in which the quality good is like the quality yellow. With the differences between the quality good and the quality "yellow" (which are no doubt considerable) we are here concerned only enough to remark how plausible it is that they shall prove to be of the sort familiar to science, i.e., a function of natural complexity or abstract. ness, and how incredible that they shall prove to be of a sort to affect adversely the essential capacity of the quality good for rational To suppose that the quality good has not such a status, that it, unlike any other quality in the world, is an incalcula. ble surd, an anchorless will-o'-the-wisp, without conditions or correlates, is an arbitrary assumption of the irrationality of the universe in just that region which philosophers, from Plato to the present day, have generally regarded as most constant, systematic, and in telligible.

In a paragraph or two, it may be worth while to consider illustratively some directions which the analysis of the good could take Let us suppose, for the sake of easy exposition, then, that we have decided that there really exist physical organisms in a physical environment. There remains an epistemological or metaphysical prob lem, whether the quality yellow or the quality good as experienced is numerically identical with or only symbolic of those objective conditions which every experience and analogy assert that they must have. It may conceivably be decided that the "raw feel" of either quality depends upon factors which are contributed by the experiential processes of the conscious organism. In this case, we might ordinarily say that the conscious quality yellow is correlated with or symbolic of, let us say, a certain definable energy-pattern, either in the organism, or in the object, or in both. We might also, by metonymy, call this energy-pattern itself "yellow." The definition of yellow in either context, physical or physiological, or in both contexts together, would be instructive and valuable.

With the conscious quality good, we have the same epistemotical problem. logical problem: i.e., it may prove that when I perceive an instance of good the row for it may prove that when I perceive an instance of the obof good, the raw feel is only correlated with and symbolic of the object of my possession ject of my perception. But at this stage a further relativity suggests itself and an amplicated gests itself, and may make the status of the good a more complicated inquiry than that of inquiry than that of yellow. It is conceivable, and is implied by the doctrines of certain wellow. doctrines of certain realistic philosophers, that the locus of the quality good is "objective" is the conceivable, and is implied that good is "objective" in the same way as that of yellow; i.e., that the experienced quality good has no dependence upon any of the processes of the organization. processes of the organisms which are concerned with it, except (perhaps) for certain (perhaps) for certain essentially irrelevant aberrations contributed to the conscious report of its per to the conscious report of it by the operations incidental to its per-

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On the other hand, it is conceivable, and is implied by the of certain other realistic philosophers, that, even in abdetrines of certain other relativity of the perceptual process, straction from the ubiquitous relativity of the perceptual process, it will prove impossible to define the quality good save with further reference to a living organism and to some activity of that organism which somehow is a constitutive factor in the quality—such organism which somehow is a constitutive factor in the quality—such activity, e.g., as "interest" or desire. If this is finally found to be the fact, the scientific objectivity of the quality good will be no more destroyed by it than the objectivity of the simple phenomena of gravitation or of metabolism is destroyed by the impossibility of ascribing either of them to a single object in isolation.

Either mode of definition would assure to the quality good a definable structure and a systematic place in the world of nature, and we need not be further concerned with them in this paper. if the definition of value as simply the character of being the object of an interest is the last word in the matter, it must be because there is no common character to be discovered intrinsic to all the objects which engage the interests of organisms. I shall not argue whether this is probable. Some ethical philosophers, however, hold that desire is the organ by which men perceive an objective and independent quality good, just as sight is the organ by which they perceive an objective and independent color yellow. Now, if, as a matter of fact, the whole goodness of an object really consists in, or persistently appears to consist in, its being an object of desire, and there is really no further and intrinsic common character to be found among objects of desire, it must infallibly appear to persons of the above persuasion that there really is nothing at all common to good the except their sheer goodness. This might easily be one source of the conviction of the indefinability of the good; but, by hypothesis, it rests wholly on a prior imperfect and prematurely adopted theory of the locus of the quality in question, and of the mode in which

The fact of the universal correlation, or identity, of qualities with their systematically definable "substrata," which science is detrine of the indefinability of the good which we have noted, but by the German phenomenologists and empirical ethics which is made to the indefinability of the good which we have noted, but by the German phenomenologists, notably Scheler. Scheler contains best known opinion of this sort is Professor R. B. Perry's: The lad the possible relativity of Value. For the distinction, touched on the possible relativity of judgments or perceptions of value, that possible relativity of judgments or perceptions of value, that possible relativity of the situation which constitutes value, see the latter that the possible relativity of the situation which constitutes value, see the latter that the possible relativity of the situation which constitutes value, see the latter that the possible relativity of the situation which constitutes value, see the latter that the possible relativity of the situation which constitutes value, see the latter that the possible relativity of the situation which constitutes value, see the latter that the possible relativity of the situation which constitutes value, see the latter that the possible relativity of the situation which constitutes value, see the latter that the possible relativity of the situation which constitutes value, see the latter that the possible relativity of the situation which constitutes value, see the latter that the possible relativity of the situation which constitutes value, see the latter that the possible relativity of the situation which constitutes value, see the latter that the possible relativity of the situation which constitutes value, see the latter that the possible relativity of the situation which constitutes value, see the latter that the possible relativity of the situation which constitutes value, see the latter that the possible relativity of the situation which constitutes value, see the latter that the possible relativi

tends that the whole of ethics is accessible by means of an intuition of the essences of the sundry varieties of value, with which is given of the essences of the survey intuition of the relative dignity of the immediately an a priori intuition of doctrine has been an attack this kind of doctrine has been as varieties. In America, this kind of doctrine has been employed by eriticize the empirical biological theory of value of Professor Pern for example.

Now, like Mr. Moore, Scheler is fond of analogies from the color qualities, whose ultimate nature and relations he thinks can be in tuited a priori by inspection of the essences. Yet it is obvious that the order and properties of the color qualities have a ground in the mathematical order of their "physical correlates," and that these latter are most profitably accessible to empirical study. Indeed, no scientist dreams of finding important truths about colors and the relations by simply intuiting their essences. By every analogy, and in default of an incredible and arbitrary discontinuity, we must assume that the same is true, mutatis mutandis, of the quality good Granting that the good has a unitary and essential quale, or variously subordinated sets of qualia, we must deem it more likely that inportant, systematic, and scientific truths about the good will be dicovered by the empirical, naturalistic, analytic method, than by the a priori Wesenserschauung, or intuition of raw essences.

In this paper I have examined the familiar proposition that a naturalistic ethics is impossible because good, which is the object of ethical study, is a simple and ultimate quality like yellow, and because all simple ultimate qualities are indefinable and unanalyzable and so incapable of conceptual treatment. In reply, I have tried to show, first, that even a typical "simple quality" such as yellow is in truth not indefinable, unanalyzable, or unexplainable, in the principal and legitimate senses in which the scientist or philosopher can have any object in defining and explaining it. So, in the second place, I have indicated the likelihood that the quality good, evel should it turn out really to be "simple, like yellow" (which is far from a foregone conclusion), must be in principle no less definable, analyzable and with analyzable, and explainable, in essentially the same ways and with the same success and significance, as the quality yellow.

The fact that goodness has a lumped qualitative aroma of its a does not at all own does not at all remove it from the familiar categories of nature.

The whole world at The whole world of our experience is composed of just such quality. The sciences, either directly or indirectly, analyze and explain this world. If there is a composed of just such removes world. If there is anything in the quality good which removes it from the possibility. it from the possibility of this painstaking and illuminating treatment, it is at any rate real. ment, it is at any rate nothing which it has in common with ordinal qualities such as vellow qualities such as yellow. A further ad hoc agnosticism with respect to good could be legitimed. to good could be legitimately argued only on the basis of very peculiar

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I confess, now, that I find it difficult to suppose that anyone las ever seriously pretended to dispute the definability of the quality good in the senses which I have considered. If no one has, however, it still seems important to discover and announce, therefore, that the program of naturalistic ethics, with its supposition of the scientific "controllability of judgments of value," has never really been significantly questioned. Meantime, in spite of our much use of the term "scientific," the philosopher need not hurry to surrender this field to the self-confessed natural scientist. The quality yellow is comparatively easy to analyze and define. The quality good is comparatively difficult, not because the good is so obvious, simple, and ineffable a theme, but because it is so evasive, complex, and eloquent.

DONALD CARY WILLIAMS.

University of California at Los Angeles.

### BOOK REVIEWS.

The New Citizenship.—A Study of American Politics. SEBA ELDRIDGE. New York: Thomas Y. Crowell Company. 1929.

"Education giveth; Propaganda taketh away. Blessed be Propaganda!" But against King Propaganda Professor Eldridge breaks alance; and he has other lances for other evils attending the presenteday conduct of social affairs. The travesty of our contemporary democratic practice, as described in Riordan's Plunkitt of Tammany and Kent's The Great Game of Politics must give way, not to of the short ballot, or of proportional representation, of the initiative, the referendum, or the recall, but to downright intelligent citizenthinks, so long as the voter remains incapable of rational decisions. The public can be made competent and real, rather than "phanton Dewey: "Logical Conditions of a Scientific Treatment of Decennial Publications of the University of Chicago.

educated. But, in order to put off his ghostly state and become really competent, the citizen must approach his duties as he would be worth the must learn about society and it would those of a profession. He must learn about society and its way as a medical student studies the human body. The gist of the as a medical student argument is that the citizen should devote at least two hours daily to his duties as citizen. The achieving of the much-desired competency is to be effected by a deliberate manipula tion of the local community; social work and adult education, as nor organized, labor under definite handicaps. The crux of the matter of citizenship (by which Professor Eldridge means "the procedure whereby the individual . . . controls his social relationships in co operation with other parties to the same relationships") lies in "the development of a primary-group organization of the community and the state," that is, in the local community. By deliberate intensification of the face-to-face contacts, and of enlightening discussion, competent citizens may be developed. The author suggests that sereral primary groups in typical American communities in various localities be treated as experiments for five or ten years. The major emphasis should be placed upon group study and discussion of public questions under competent leaders and directors. Public school buildings might be utilized as centres, and either private or public funds might be employed to finance the experiments. If we could contrive the emergence of the competent citizen a new social order would be on the way; along with other evils a coherently organized self-conscious local community would eliminate the traditional political party. The Greek city-state, cooperative Denmark, and the Communist Party of Russia, as well as the history of the church, are cited by the author as evidence that the suggested experiments are not altogether impracticable. "The contemplated of ganization of citizens might indeed be conceived as a sort of modern secular analogue of the church, and even as its possible successor. Could not the vital secular interests of such an organization become as appealing and compulsive?" (p. 332).

But could this intensified culture make all of us competent! for the part of t thinks not. Citizenship is a function, or group of functions, for which all adults which all adults are naturally no more qualified than they are for any other specific function. Perhaps many of us will be unable to develop competence. develop competency. The author therefore supplements his plan for the intensification. for the intensification of culture by a suggestion that the suffrage be restricted. Those made in the suffrage by a suggestion that the suffrage by restricted. Those unable to graduate from a high school scarcely would be capable of conwould be capable of competent citizenship, he thinks (p. 311).

One must arrest the capable of competent citizenship, he thinks (p. 311).

One must sympathize with the effort of Professor Eddridge with a very constant of Professor Eddridge with the effort of Professor E grapple with a very apparent need. The mutual confidences and understandings of the lead o understandings of the local face-to-face group were indispensable to

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frontier democracy. We have lost them in the hurly-burly of frontier and But may it not be that our new inventions, such as the podern inc. the radio, rapid transportation facilities, and now the telephone, by their multiplication and intensification of social conjelevision, will make possible a new and larger type of community as little resembling the cross-roads community as Elizabethan England resembled the Europe of Charlemagne? The modern public is something more than a collection of New England town-meetings. Why, to be more specific, should not functional rather than geographical proximity be the basis upon which to organize the modern "primary foup"? Furthermore, might not social science courses in the high shools be made to serve the purpose of providing such minimum competency as might admit to citizenship? Why not experiment there! It scarcely seems advisable to aim at an omnicompetent eitizen, whatever traditional theory may assume. Even our social experts are not omnicompetent; indeed, no one has time to be.

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To the mind of the present writer the question of the rôle of the emert, to which Professor Eldridge might have paid more attention, is antecedent to any discussion of an educational program for the citizen. The organization of public health, to use an analogy, involves the education of both the medical profession and the public. One does not need to be a physician in order to keep in good health, but merely to know enough to act upon the best available expert advice. The general public needs similar knowledge in regard to matters of general social significance, rather than expertness, in or "citizenship." It is the business of the expert belp make the public, his fellow-citizens, articulate in reference to their matters of common interest by stating concisely what is posble. In specific predicaments he can portray the possible alternafor courses of collective action, facilitating by this means the funcof reflection, the intelligent selection of policies. The people and the selection of positive are reand they can desire intelligently only where the possibilities are re-The expert's business is to reveal social possibilities; the new results of them. The expert's business is to reveal social property the people, by their votes or their representatives' votes, then May select among the possibilities before them the ends at which they The problem of the means the use of which they are willing to risk. The problem of democracy involves, consequently, the question of development democracy involves, consequently, the question of the development at every level of expert opinion, or social science, well as the as the question of making it effective. We wish that Prothis program of discussed the training and use of experts as part The program for democratic citizenship. The New Citizenship is very well written; its emphasis is in a direction is most comfruitful direction.

The appeal to experimentation is most com-

mendable. There is a brief appendix on "The Citizen's Interest in Public Questions" and an adequate index.

PAUL W. WARD.

SYRACUSE UNIVERSITY.

A History of Science and its Relations with Philosophy and Religion WILLIAM CECIL DAMPIER DAMPIER-WHETHAM. Cambridge: Cambridge University Press. 1929. Pp. xxi + 514.

As the title suggests, here is a book designed to meet a long felt need in the English-speaking world. German and French works attempting such an enterprise have long been in existence, but so far as my knowledge goes nothing quite like it has hitherto appeared in English. Histories of science, of philosophy, and of religion we have; portrayals of the conflict between science and religion; also philosophical interpretations of limited epochs or aspects of scientific discovery; but no general history of science considered throughout from the standpoint of philosophical and religious interests. The writings of William Whewell might with some generosity be viewed as filling this function, but it is nearly a century since they appeared and much has happened in a hundred years.

It is obvious that rather rare qualifications are necessary in the author of such a book. On the side of scholarly familiarity with the fields of historical knowledge which his treatment attempts to bring together, Dr. Dampier-Whetham gives few opportunities to any but a meticulous and carping critic; if his interpretation of the history of philosophy follows somewhat stereotyped lines, and his comments on some specific points, such as the pragmatic theory of truth, are open to serious attack, he is but following the lead of many philosphare is the phers in the narrower sense of the word and is no more guilty than they. But many readers will almost certainly find themselves raising the ing the question whether the author's method of treatment is such as to render the as to render the book as valuable to any definite group of thinkers as they had hoped from the title. This doubt will increase in the latter next of the latt latter part of the book. In a typical group of three chapters Dr. Dampier-Whother Dampier-Whetham outlines first the main developments of pine teenth-centrary at teenth-century physics, then portrays the progress of biology in the same period and control of the same period and control same period, and finally discusses the relations between these achievements and influence in the search are the search and influence and influence in the search are the search ments and influential philosophic systems. The three themes are thus left in rather as thus left in rather disappointing separation, and the really significant interpenetration. cant interpenetration of scientific and philosophic thinking both in the concrete discoveries the concrete discoveries on the one hand and the construction of speculative systems on the speculative systems on the other is all too meagrely recognized. the student of philosophy, accordingly, the chapters which mainly with his own subject mainly with his own subject are elementary. While those on solutions student former there ar from th

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of discovery are too compressed to be very illuminating; to the student of science the latter chapters will be unnecessary and the former rather externally appended; and outside of these specialists former probably few readers with sufficient background to work out there are probably a unified view of the history of thought.

There is room and need for a book which will more fully avoid these artificial separations, a book which will discuss the work of a great scientist in the light of all the intellectual forces which have given him his presuppositions and rationalized his method and also of the coming cosmologies into which his results will enter, in short, a truly philosophical history of science rather than a history of science in its relations with philosophy. There is good ground for believing that such a discussion would be highly valuable to many scientists as well as to students of philosophy and the non-professional reader.

But if one be tempted to emphasize such detractions his criticism will be rendered more sympathetic if he asks who would be able to give us this ideal history of science. A few names, a very few, come to mind—all of men so preoccupied with other absorbing tasks that we can hardly anticipate anything of the kind from their hands. And the above criticism does not by any means apply so strongly to Dr. Dampier-Whetham's treatment of ancient and early modern science as to his comments on the more recent period. Few readers with some scientific and philosophical knowledge can not profitably follow him there.

E. A. BURTT.

UNIVERSITY OF CHICAGO.

### JOURNALS AND NEW BOOKS

GIORNALE CRITICO DELLA FILOSOFIA ITALIANA. Anno XI, Fasc. 3.

Il valore storico della filosofia moderna: Pantaleo Carabellese.

Idealismo cristiano: Luigi Stefanini. Tendenze platonizzanti alla

Corte di Mattia Corvino: József Huszti. Quindici lettere di Terenzio

Mamiani a Francesco Bonatelli: G. Gentile.

Bühler, Charlotte: The First Year of Life. New York: John Day

Lutoslam 1930. 281 pp. \$3.50.

Intoslawski, Wincenty: The Knowledge of Reality. Cambridge
Rignano B. 1930. ix + 203 pp.

Rignano, Eugenio: The Nature of Life. (International Library Harcourt, Brace & Co. London: Kegan Paul, Trench, Trubner & 1930. x+168 pp. \$2.75.

Spir, A.: Esquisses de Philosophie Critique. Introduction par Léon Brunschvieg. Nouvelle édition. Paris: Félix Alcan. 1930 xvi + 167 pp. 15 fr.

#### NOTES AND NEWS

We regret to announce the death on August 25 in London of Addison W. Moore, professor emeritus of the University of Chicago.

Professor Moore was born in Plainfield, Illinois, July 30, 1866. He received the degree of A.B. at De Pauw University, 1880; of A.M., 1893; and the Ph.D. degree from the University of Chicago in 1898. In 1895 he became assistant in philosophy at the University of Chicago and had been on the teaching staff of that university until his retirement as professor emeritus a year ago.

Professor Moore was the author of Pragmatism and Its Critics, Existence, Meaning and Reality, Studies in Logical Theory, and

Creative Intelligence.

On June 5, 1930, the new Hall of Philosophy of the University of Southern California, presented by Mrs. Seeley Wintersmith Mudd, and Seeley Greenleaf Mudd, was dedicated. The address entitled "The Ideal of a School of Philosophy," was delivered by Professor H. Wildon Carr. The evening meeting consisted of a symposium "Some Problems of Mass Education" with the following speakers: F. C. S. Schiller, H. B. Alexander, J. E. Boodin, and H. J. Paton.

The School of Philosophy of the University of Southern California will publish in the fall the first two volumes of a new series to be entitled: Classics in Philosophy. The aim of the series is to make some of the lesser known but very important classical works of philosophy available to students in English. It is not intended to publish selections, and the translations will reproduce as closely as possible the original form. The first volume is Condillac's Treatist on the Sensations, an English translation by Geraldine Carr. The second is Professor Wildon Carr's translation of Leibniz's Monadology, with an introduction, commentary, and supplementary essays.

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### THE JOURNAL OF PHILOSOPHY

### AN ANALYSIS OF THE EXPERIENCE OF TIME

DERGSON'S discovery that the time of inner experience is radically different from the objective time of mechanics, the one king a free-moving undifferentiated unanalyzable stream, the other fixed correlation of points of space with positions of moving bodies. las done a great deal to focus attention upon the uniqueness and eiginality of subjective time. The relativity theory, since it implied that the time calculations and measurements of various observers ore unavoidably different, that therefore the position and motion of these observers goes to constitute the objective time of physics, also reinforced this interest. Idealists were quick to construe an argument for subjectivism and idealism, and Neo-Kantians, such as Cassirer, were quite as convinced that the acceptance of the new physics implied the Kantian Forms of Intuition.

In the "space-time interval," however, all subjective differences to different observers seemed to be transcended. The result of be General Theory was a space-time continuum, from which subletive time had been banished quite as effectively as in the Newbinian physics which Bergson found so objectionable. Time in the by scheme presents many oddities due to its affiliation with space. like the dimensions of space, it seems at first sight to be quite reresible, for no physical law, according to Eddington, distinguishes between future and past. There is perhaps one exception: the Law of Thermodynamics. This provides for an increase in the random element toward one end of the time-line and thus gives direction and irreversibility. But for this important exception, he laws of physics would be indifferent to the distinction of future past. Unfortunately the law in question is very doubtful and any authorities now deny the progressive increase of the random the state of physical science would seem to supthe necessary directionality of time, or to distinguish between last and future. But past and future are essential to time. But past and future are essential to the would be be a time and admit a unique distinction between them would be be a time does not supply this to be a time series. And if physical nature does not supply this distinction. distinction, it must, of necessity, arise in consciousness; i.e., the forms of apprehension, or the contents of these apprehensions, must be the burce of temporal determinations. Certainly, in any case, it is not the increase. be increase of the random element which constitutes the distinction

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between past and future in consciousness. The distinctive nature of time is not a feature of the passage of nature, but due to the transcendental forms of apprehension.

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If we consider the theories of time held by Russell and McTag. gart we are led to the same conclusion. Mr. Russell holds that time is the difference, with respect to truth and falsity, between two propositions whose sole difference is that the one specifies the time, T, and the other the time, T'. Thus time exists when "my poker is hot at time T'' is true and "my poker is hot at time T''" is false. All true propositions about change and temporal events, according to Mr. Russell, are eternally true, and the facts which correspond to them are changeless. That is to say, each fact of change is itself changeless. Propositions about temporal occurrences state relations of "before" and "after," but such relations exist permanently and if they hold at all, hold at all times. Thus "The Battle of Hastings occurred 748 years before The Battle of Waterloo" is true at all times, since at any point of time the same interval exists between the two events. Now if all propositions about temporal events take this form, it would seem to McTaggart, that change is banished from the world and the distinction between the actual present in contrast to its particular past and future, reduced to an illusion.

In criticizing Mr. Russell's theory he distinguishes between the two time-series. The A series is the constantly changing series of present moments with the dwindling future ahead and the growing past behind. The B series, on the other hand, is the series of before and after relations which bind all events together in a changeless concatenation. In the B series change is excluded, in the A series there is constant change. But this change can only be stated as a changeless fact and Mr. Russell evidently regards it as a sort of illusion. Mr. Russell's account of time, according to McTaggart, excludes the A series, all propositions about temporal events being assertions of constant relations of before and after. But if Mr. Russell rejects the A series, according to McTaggart, he has rejected time for the time, for the A series is necessary for time if time is to include change. The D change. The B series alone, he holds, does not suffice to the constitution of time are are tution of time. It might indeed be the case that events are arranged in social ranged in serial order, determined by asymmetry, transitivity, connexity, etc. but the nexity, etc., but there would be nothing distinctively temporal about such a series and the such as such a series. The relations "before" and "after" themselves would have no temporal at the actual have no temporal significance without a reference to the actual "now" which is "now" which is constantly moving into the future through the changeless intervals of the B series. Thus in the above proposition.

"The Battle of Host." "The Battle of Hastings occurred 748 years before The Battle of Waterloo," the past to Waterloo," the past tense of the verb is used, which demonstrates at ature of e trans.

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the essential dependence of "before" upon a reference to the attal "now." If the same proposition had been asserted a thousand that the verb would necessarily have been in the future tense. From this follows the important phenomenological law, once expressed by G. E. Moore, that it is impossible to assert the same judgment about temporal events twice over, for each successive judgment will contain a reference to a different "now."

The consideration of the A and B series and the failure to undertand the above law, leads McTaggart to a drastic conclusion. Both wries, he holds, are necessary for the constitution of time, but show themselves on analysis, contradictory. In the A series an event is ther present, past, or future, but if it has one of these time determinations it can not have either of the other. Thus if it is present tean not be either past or future. In the B series, on the other hand, every event is both future, present, and past. But an event an not be exclusively either present, past, or future and all three, and therefore nothing can exist in time. This argument involves a strangely obvious equivocation in the word, "present." In the A wies the present is an absolute point of subjective time, the actual now, and is expressed by a proper name, "the present." In the B series the present is any event relative to the events which are before and after it. Here "the present" is not a proper name, but rather a relative term, a description. But this description, i.e., "the present" in this sense, is also dependent for its temporal significance, as has been shown, upon a reference to the present in the first sense, i.e., the actual "now."

McTaggart's argument does not disprove the reality of time, but serves to bring out its essential dependence upon the time-determinations of consciousness, for the actual "now" is not a quality of relation of natural objects, nor can it be reduced to the changeless concatenation of before and after relations. The determinations inture, now, just now, and past arise only in consciousness. In "the passage of nature," there is no passage, but only the changeless spread of space-time intervals.

But McTaggart has advanced a more serious argument against time. Whatever is extended in time must have parts of parts to infinity. And all these parts of parts to infinity must have sufficient descriptions which determine them as parts of these parts and distinguishable from all the other parts. McTaggart argues that in the case of matter supposed to be extended in time, it is impossible to find a relation which would determine these parts by "determining correspondence," and that since matter qua in time must have the impossibility of selecting or determining relations in this case,

seems now very doubtful. The discussion of Zermelo's principle of "selection" has indeed shown that such selecting relations can not be proved for these infinite cases, but what McTaggart needs for his argument is not that these relations in the case of matter qua in time are doubtful, but that they are impossible.

But after having proved, as he believed, the unreality of time. McTaggart was far too sophisticated to conclude that there is there. fore no experience of time. If time is an illusion, it is at least a real illusion. The unreality of the temporal series, if it were a fact, would not make our experience of time a bit less real. McTaggart therefore defines the C series, a series which seems to have all the properties which are attributed to the real time series but does not and can not, have them. Throughout the second volume of The Nature of Existence, he continues to analayze this C series in its various aspects and instances, and approaches, in so doing, the method of phenomenology. The phenomenological analysis of the experience of time, like McTaggart's account of the C series, is quite independent of the reality or unreality, or the nature of the transcendent time of physical objects. Its data are time apperceptions, i.e., immediate experiences, in which temporal experiences appear, together with the temporal contents of these experiences. Physical objects, being transcendent of consciousness, are excluded from the phenomenological analysis. Many of our experiences, to be sure, are directed upon the duration or succession of physical processes, but neither these processes nor the appearances of these processes appear as immanent objects in inner consciousness. The proof of this is seen in the fact that the sensational content which represents the appearance in consciousness may receive subjective determinations, may vary, in fact, while the appearance, or its object, remains the same, and conversely; while in the case of illusion or hallucination, the appearance or the object may be wanting altogether. Every such mental act directed upon transcendent physical objects has, to be sure, a sensational or imaginal core, but neither the one nor the other can be identified with any aspect or appearance of a physical object. very possibility of the analysis of appearances or sense-data, and the obvious factor of the analysis of appearances or sense-data, and the obvious fact of error, presupposes the variation of sensational content while the content while the sense-datum remains the same. It is no doubt these circumstant arms of the same of the sense-datum remains the same. these circumstances which lead Broad to announce the principle, so dangerous to like the principle, so dangerous to his Sensum Theory, that there is no reason to have pose that sensa must have all the qualities which they seem to have. Specifically we must have all the qualities which they seem to have Specifically we may conclude that the sensed duration is never identical with the identical with the perceived, the objective, duration.

The phenomenological analysis of the inner consciousness of time is thus logically independent of any consideration of the objective

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of time jective physical order. It is concerned not with physical objects, but with a description of those intentional mental acts (according to their description of those intentional mental acts (according to their senes) in which physical processes, like the ringing of a bell, are intended. It is also occupied, of course, with the imment objects such as the tone (of the bell) in consciousness. It confines itself accordingly to mental experiences and their contents, and to whatever objects can be immediately known, and thus remains in the one field in which absolute knowledge can be certified.

Professor Husserl's lectures on this subject, which were first dehered at Göttingen in 1904-1905, but not published until the 1928 Jahrbuch, begin with the usual attack on empiricism, an attack in this case on empirical theories of time-perception. The theory that the objective duration and succession enter the mind through sensaion and thus determine our perception of time is completely mistaken. The duration of sensation is not the same as the sensation f (or rather consciousness of) duration; the succession of sensations is not the same as the sensation of (or rather consciousness of) succession, and the temporal qualities of physical objects, if they have any, would not explain the consciousness of time. Nor can it be said, with Brentano, that the consciousness of duration is due to the presence in consciousness of sensations and images from previous REDSAtions, for this would give us only the consciousness of an egregate. It is, of course, significant that, as Professor Husserl temarks, Brentano is led by his psychological theory to regard the perception of succession or duration as an illusion caused by the ireliness of the original association. A similar debacle has also been observed in the non-phenomenological theories of Russell and McTaggart.

The source of all temporality in consciousness, according to Prolessor Husserl, is the original impression, which, arising in conlegiousness as the content of the present moment, sinks steadily into
the past, every moment widening the interval between it and its
origin, and so shifting by an inevitable sequence from the present,
to the just present, then down the long corridor of the past; yet relaining always its fixed position in the series of impressions, yieldloreshadowed, yet echoing throughout the subsequent moments,
lading out and reverberating, and thus binding itself both to the

The original impression has the following characters: (1) It is the limit of a series of fading-out processes, but is not itself the verberation in consciousness has an impression as its source. Every figural impression is likewise swept by the comet-like tail of the

reverberations and fading-out processes of earlier impressions. (2) The original impression is not founded upon other elements of con. The original impression or a memory. On the one hand, it is the absolutely unmodified, the source of all other modifications of consciousness. On the other hand, it is logically dependent for existence upon the existence of a future impression and a past impression quite as much as these are dependent upon it. As the unmodified source of all modifications of consciousness, it is logically independent. As the present content in contrast to the future and the past, or as before or after other contents, it is logically dependent. (3) Each original impression is always displaced toward the past by a new impression and this by still another impression according to an a priori modification which is independent of the similarity or dissimilarity, continuity or discontinuity, of the sensuous content. Thus a tone sinks into the past whether it continues the same or changes or ceases. But through the steady overlapping of impressions, the effect in consciousness is always that of non-discreteness. (4) But a more important type of continuity is constituted by the essential fact that every impression means or intends the coming moment. And this meaning or intention or expectancy, which is called protention, is always partially fulfilled when the dawning moment becomes the actual present. The very essence of the impression requires that it mean or intend the coming moment, and be fulfilled in it, for an impression which did not realize itself in a new impression would not be an impression, a consciousness which came to an end without an experience of that end, an impossibility, a time which completed itself without there being a time beyond, and hence temporal objects beyond, an absurdity. In the Ideen zu einer reinen Phänomenologie und phänomenologischen Philosophie, where this point is briefly discussed, the seeming implication of immortality for the two dimensional individual time series, is consciously avoided, as irrelevant to the phenomenological investigation gation under hand.

(5) Protention logically depends upon another character which is also essential to every original impression, namely, retention. Retention is a continual beholding of the "just now." That every perception has this feature is, of course, a phenomenological insight, a product of pure description. But it is also implied by the essential fact that the impression has duration and that the corresponding perception is simultaneous with this impression and passes over continuously into new perceptions. Also it is necessary for the explanation of the intentional continuity of consciousness, and of the nature of protention, for protention is dependent upon, and constituted specifically by, the retention of previous moments.

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wake up suddenly without a retention of previous moments, the Wake up of previous moments, the motentian is also wanting (as something given in an act of apprehenprotention, which explains our instant shock of ambiguity. But the promion is present, in such a case, nevertheless, as reflecting back upon be experience shows, and retention is also present and of both there awareness, as the possibility of recovery through reflection shows. only they are not known at the time by an act of apprehension. That retention of previous conscious moments is present in this most gitical case is proved by our happy capacity, aided in memory, of toking the awakening consciousness with the previous states. For twill be shown that certainty on this point is only achieved through the corroboration of the memory of A by retentions of A. Retention, course, is essentially different from memory. Retention of A demands the existence of A, while memory of A does not make this remirement. Memory, moreover, is an act which endures in time; retention, an act-character, a mere intentional aspect.

(6) It is thus a peculiarity of the original impression that it is always accompanied by retentions of previous moments of conscious-1888. Thus we have the series of original impressions: A, B, C, D..., which is the time-line of the immanent objects (tones, for example) in consciousness. But in contrast to this real temporal Eries, i.e., the series of original impressions (representing in the ease of simple perception, the focal objects), there are the series of retentions of these impressions. Thus the retention of A, which we may symbolize as a, is simultaneous with B; a', the retention of the retention of A (i.e., the retention of a), will be simultaneous with C, and so on. Simultaneous with D we therefore have a simultaneous It of retentions, namely, a'', b', c and so on. By a law of temporal perspective, the further these retentions are removed from their ource, the more their content is depleted. Yet in spite of this they trye to corroborate the memory of A, which otherwise has no evidence of any kind, by their backward glimpse, however indirect, at titself. The elements simultaneous with D constitute a phase of timporal consciousness and it is interesting to note that a whole phase consciousness and it is interesting to how the fact, many of the a priori characters which are possessed by the impressions within it. This is necessary for the unity and integration of all within it.

on of a biography and for its a priori character as one biography.

(7) The original impression has also the essential character, of course, belongs also to consciousness in a complementary atter it is long past. Here consciousness possesses a priori the free-offits nature, nor is it confined in memory to a chronological or any

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other fixed sequence of remembering. In other words, the past experience may be fixed upon freely and out of context (a fact which incidentally could never be exclusively explained by either association or the conditioned reflex). In remembering any such past experience, the remembered experience has necessarily the same protention, retention, and simultaneous environment as it had when pres ent, and here, of course, the protention is rich and exhaustive. The mind is thus led on passively in the progressive recapitulation, of a past experience in the order in which it was originally lived through In the original selection of the remembered experience, on the other hand, consciousness is active. In reproductive memory, since a past time is made present, a past "now" lived through as though it were the actual "now," there are necessarily two protentions, two retentions, and two fields of simultaneous objects, for the remembered object has its time determinations and associations in the past, while the memory, as an act in the actual "now," possesses quite different determinations which are only revealed by reflecting back upon It is, of course, quite possible to refer back to a past experience in what is called a signifying act, without reproducing it. In this case the past "now" with all its qualities and temporal determinations is not lived through again and this is by far the best way to bring to mind a past tooth-ache. It is a pity that the theories of many New Realists cut them off from this mercy.

Professor Husserl's account of memory and retention shows a great advance over Bergson's rather mystical, and certainly mystifying, theory of our knowledge of the past. That the past should be contained in the present actually (and not merely intentionally) is certainly a contradiction, for a past and a present moment can not have have the same position in time. A present act, on the other hand, can mean or intend a past event, or even reproduce it anschaulich, recapitulating the experience with all its sensuous or imaginal characters and all its temporal determinations. Also, through retention, it is possible in certain cases to verify a memory. Thus Professor Husserl's description of Husserl's description of the past permits a certain corroboration of memory, without involving the contradiction or incomprehensibility of Berggon's the contradiction or incomprehensibility of Bergson's theory. It also escapes the skepticism of the usual dualistic theory. dualistic theory, according to which memory, never verifiable, must be accented as be accepted as a postulate, i.e., as a doctrine of blind faith. Professor Hussen!'s fessor Husserl's account of the myriad fading-out processes which float through come in distinct float through consciousness at all times, in the twilight indistinct ness of "primary awareness," and his doctrine of the temporal stream as opposed to the temporal stream as op stream as opposed to the temporal objects which float upon it, also serve to separate and the temporal objects which float upon it, also serve to separate out the true discernments of Bergson, and to bring to light those centain to light those certain facts of inner consciousness, the misinterpretation of which has led him to his erroneous theories.

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We have now finished a brief description of the time determinaof the original impression and of the other contents of conwhich all arise from it. Every temporal object in consciousness is either (1) an impression disclosed in perception or (2) impression disclosed by retention, or (3) an impression brought back to the mind by memory or some similar act, or (4) an imoression protended (or anticipated) in the future. Thus the temnotal determinations of the original impression, i.e., in the actual "now" phase, involves the time determinations of every other constituent of consciousness. The various laws of temporal experience established in this phenomenological investigation, it is interesting to note, are a priori and transcendental. Thus to take an example, there are the two a priori temporal modifications of the impression as it sinks into the past. First, it retains its identical position in the time series, i.e., relative to other impressions, but, secondly, with respect to the actual "now," it recedes steadily into the past, changing its position every instant. These two modifications are obviously independent of the qualitative change or constancy, the qualitative continuity or discontinuity, of the impressions themselves, and are, therefore, a priori.

An interesting illustration of the a priori and transcendental character of the time determinations we have been discussing is afforded by the case of time in fiction. Every time, if it is thought of as real time, must necessarily be conceived as a segment of the one time and hence as either simultaneous with, future to, or past to, the actual "now." Moreover, when, in reading a novel, we make the fictitious "now" present and live in this "now," protention, retention, and all the other necessary modifications occur, in general, much as they do in memory, though the fictitious time we experience so vividly, corresponds to no objective time whatever.

So much for temporal objects. We must now return to the temporal stream in which their temporal nature is constituted. It has already been pointed out that the impression, and indeed every constituent of consciousness, fades out with other such reverberating processes into the dim indistinctness of the one temporal stream and tatevery actual "now" is swept by many reverberations of previous experiences, all uniform components of the one great echo from the to move in James's outer margin or fringe and to partake of the object of attention, nor is it the object or content of an appressions of attention, nor is it the object or content of an appressionsness, with respect to either quality or difference. Into the mental acts themselves as contrasted with their

contents or objects. The auditory perception of the ringing of the bell intends primarily the transcendent process of the ringing of the bell and it also intends, in a different way, the immanent temporal object, the tone (of the bell) in consciousness, but in no sense does it intend itself. The perception and the same is true, of course, of memory, anticipation, etc., we live through, but do not experience as something intended. A mental act in the phase in which (as reflection assures us) it occurs, is not a mental object, but a strand of the flowing homogeneous stream. That is, there is no apprehension simultaneous with a mental act which intends it. An act of reflection, to be sure, may be directed upon a past perception, but when the perception becomes intended in such an act, it ceases to be a strand of the stream.

The temporal stream must be sharply distinguished from temporal objects, such as tones. The stream itself is timeless; the temporal objects are in time. They undergo time-modifications, being first future, then present, then past, but retaining always their fixed place in the temporal series of impressions. But only if the future, present, and past moments occupied by a temporal object are related to something outside time, is it possible for a temporal object to be first future, then present, then past, for all relations holding exclusively between moments of time are fixed and The timeless relatum here is the stream. By its intrinsic nature, its flow is even, uniform, and homogeneous, all strands of the stream being homogeneous with each other and with the one identical stream, and all flowing at the same uniform rate. It is by virtue of this uniform flowing stream of reverberations and mental acts that the impressions receive their temporal inflection of future, present, just present, and past, whereas it is by virtue of their before and after relations to each other, that they preserve their constant place in the time series. The existence of the stream is established by lished by inspection of inner consciousness, but it is also necessary to any explanation of the time characters of temporal objects. ever the nature of temporal objects, whether they change or remain the same, vary continuously or discontinuously, etc., they must play their part can be continuously or discontinuously, etc., they must play their part against the uniform movement of the stream, and if they sink steadily into the past, it is only by virtue of the constant stream that they do not be past, it is only by virtue of the constant stream that they do so. But the temporal stream which constitutes the time movement of improvement of i movement of impressions is itself timeless as inspection shows, and reason prescribes. reason prescribes, for were the stream itself made up of temporal objects, it would be a constant. objects, it would require another stream itself made up of temporality. And this second at And this second stream in turn could not be made up of temporal objects, for all the objects, for all the progressive time modifications of future, present, and past are not constituted by and past are not qualities of temporal objects, but determined by

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With a certain insistence, the question now arises, how, if the stream is never apprehended, can we know so much about it? The answer can only be that the stream knows itself with an awareness which the difference between subject and object does not appear. That the reverberations and mental acts should be unconscious, is inpossible, says Professor Husserl, for they are within the stream of consciousness. Moreover, every mental act such as a perception. nossesses retention, which can only be retention of a conscious experience. We must therefore ascribe to reverberations and mental arts an immediate, primary awareness, which belongs, in fact. mitially to all contents of consciousness. Thus in every perception we distinguish the passage of the perception itself, though our attention, or rather the intention of the act, is directed upon some transcendant object, such as a table. We observe the table, as we say, while time flows. But the primary awareness of the perception while we are perceiving the table, though it is certainly an awareness of a homogeneous uniform flow, is in other respects, sui generis. It does not make distinction with respect to quality and difference. We do not distinguish the character or nature of our perception of the table while we are perceiving the table. But in reflecting back upon the perception in question in an act of apprehension (an apperceptive act), what was "before" sui generis becomes articulate, what was unanalyzed and undistinguished is apprehended cognitively.

This particular analysis, though Professor Husserl does not carry it out explicitly, is nevertheless consistent with the general discussion in the Ideen, sections 77–79, and provides, I think, the only possible explanation of our knowledge of the temporal stream. Our phenomenological knowledge of mental acts is attained in other refettive acts, which analyze what is given sui generis in the retention of the original act. That is, of every original act, A, there is a retention of A, and then, a retention of a retention of A. Simulaneous with a given retention of A, a reflective act may occur, of A. Were this not possible no knowledge of our experiences would which analyzes the nature of A as given sui generis in that retention be possible. The doctrine of retention is the only escape from a all acts and their contents.

But how can it be said that the stream which moves is yet out Does not movement presuppose temporality? The an-

swer requires a preliminary understanding that we are here dealing with time as given to consciousness, not with time in some other sense, if indeed there is another sense. What is given to conscious. ness in primary awareness is not movement in the sense of a transit from place, or from moment to moment. What is given is a sense of movement, a sense of uniform flow, and this sense of movement is quite consistent with the non-temporality of the stream, i.e., for consciousness at the phase of consciousness in question. And this nontemporality of the stream in the actual present phase of consciousness does not contradict its temporality after this phase of consciousness has passed. A reflective act may be directed upon the undiscriminated contents, which forthwith cease to be stream, and through this reflective act, the original act is analyzed and given a place in the time series, which it did not have "before." The difficulty here is in saying that a mental act, as a strand in the stream, is first timeless, and later, through the reflective act, constituted as a temporal object. But this difficulty only appears if we assert an objective time, external to, and independent of, the time constituted by and in consciousness. But such a time, as we have seen, would be meaningless and impossible. All that is needed for the solution of this difficulty is the phenomenological structure of intentions in consciousness, by which we refer to such an external time.

This last analysis, for which Professor Husserl should not be held strictly accountable, illustrates the difficulty of discussing the time stream (qua stream) which by its very nature can not be known by an act of cognition or apprehension, but it also illustrates the necessary existence of this stream, inasmuch as the effort to seize it directly always seems to transform it into a temporal object, which presupposes again, a timeless stream as the necessary correlate of any temporal process. In any case it will be seen that the above analysis corrects the rather illogical theory of Bergson and the time-killing theories of Bussell and M. M.

theories of Russell and McTaggart, at many points.

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### AN ALLEGED ESCAPE FROM THE PARADOX OF JUDG-MENT

The paradox of judgment, set forth in a previous essay, must be briefly re-stated, in order to assess the validity of a criticism which has since been urged against it.<sup>2</sup>

It may be taken as an agreed starting-point that the act of 1 "The Paradox of Judgment," this Journal, Vol. XXV (1928), pp. 197-

205.

2 D. W. Gotshalk, "Qualities, Relations, and a Paradox of Judgment," this Journal, Vol. XXVI (1929), pp. 645-657.

freferer from the presence another problem nothing (a) when tion of i or to bot applies the becomes whole, we sis, is see the tween the control of the contr

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reference" can be distinguished—psychologically and logically the act of "description." It is one thing to indicate the from the state the fact that it is; it is quite presence thing to specify its nature or to assert what it is. The whole problem of knowledge is bound up with this distinction. There is nothing problematic about the cognitive situation until we ask whether or not reference to an object differs from the description of it; (b) whether truth pertains to reference or to description to both at once; and (c) whether either reference or description applies to the object as cognized or to the object as real. Knowledge becomes a philosophic problem when the cognitive situation as a whole, which I call the "pre-analytic" datum, one given for analyis is seen to involve both reference and description, the distinction between them being "post-analytic" or given through analysis.

It is only in the light of these considerations that judgment as a ognitive act presents a serious paradox. The paradox is simply this, that in judgment we are unable to separate the function of reference from that of description. "This spire is gray," to conine our attention to a single perceptual judgment, refers to an obbut by describing it. Its reference is description. The recognition that in judgment reference and description constitute one and the ame act—that in judgment we can indicate an object only by predication—renders precarious the so-called "objective reference" which any judgment requires to secure its "material" truth. We are confronted by the following dilemma. Either (a) the only reference of judgment is to what it itself describes, or (b) its reference is to something else not described by it, in which case the object is described by another judgment or is simply nondescript. Either alternative works havoc with the "truth" of the judgment on the apposition that relation to a "real" object is one of the necessary anditions to establish its truth. If we assume that the only object which judgment can refer is the one described by it, "objective reference" becomes a meaningless phrase, there being no object outside the one immanent in judgment meant or intended. On this hypothesis, there can never be any false judgment. And if we assume that that the object to which any judgment must refer is not the the described by it, but some other object which the given judgment truly re-presents, such an object to be known as "real" presupposes an antecedent judgment, and this judgment, owing to its identity of lying eith and description, presents the same difficulty, the escape hing either in an infinite regress of judgments or in a nondescript object of which we can not say what it is. On this hypothesis, there tan never be any true judgment.

This, in simplified form, is the paradox of judgment, presented

more elaborately in the paper that has been criticized. The solution of the paradox is another matter. My own solution, which is here irrelevant, depending upon a fresh analysis of the nature of judg. ment and of the nature of truth, can not in the present context be indicated. Here I am concerned solely with the demonstration that the paradox is genuine, and not with the manner in which it may be solved. And I can prove anew its genuineness in the process of examining Mr. Gotshalk's criticism.

Mr. Gotshalk admits that in judgment reference and description are fused in one act: "the judger refers as he describes"; but he contends (1) that such fusion does not result in a paradox, and (2) that the assumption which renders the paradox plausible is "invalid and false." 4 With these two contentions I shall deal separately.

(1) A favorite way of explaining a difficulty is to explain it away. Mr. Gotshalk escapes from the paradox of judgment by showing that there is no paradox. And he shows this by what Mr. Dewey has called "the method of partition." Qualities and relations, he asserts, belong to two distinct "realms," namely, the realm of "existence" and the realm of "knowledge." There are thus two "types" of qualities and relations—"ontological" and "epistemological." By an ontological quality or a relation he means that it "is a particular and an element of existence, and not a universal or an element of knowledge." Per contra, epistemological qualities and relations are "elements of knowledge or universals." 5 ties and relations are "comprised of a fund of meaning which, as valid for a multiplicity of particulars, is a factor, not in presented existence, but in the interpretation of presented existence, i.e., in knowledge." Identifying forthwith all "particulars" with "specimens of existence" and the knowing of them with "direct inspection," Mr. Gotshalk is able to show that ontological qualities and relations, as distinguished from epistemological ones, exist and can be known. The realm of existence thus coalesces with the "perceptible and the state of existence thus coalesces with the "perceptible and the state of existence thus coalesces with the "perceptible and the state of existence thus coalesces with the "perceptible and the state of existence thus coalesces with the state of existence the existence that the state of existence the state of existence the state of existence the existence that the tible world," and is "ontologically differentiated independent of our knowledge"; knowledge, which is "a tissue of universals," constitutes a distinct " tutes a distinct "realm," in which the realm of existence is re-presented or expressed in terms of "concepts."

From the point of view of the distinction between two "realms," got the paradox of judgment disappears, according to Mr. Got-shalk, in the fall disappears, according to Mr. Gotshalk, in the following manner: "Independent of judgment, on our view heing which is manner: "Independent of judgment, on the set our view, being which is to be judged is arrayed with a whole set of cha This 11 ment. But th heing, logical of kno other ceptua

are dis dox of In shalk' first p terpre sals." The k versal ferent ticular implie ticular tially tion" Yet th constr ment . edge.' are, o either which the se descri that " the pa refere does, a any g questi its ob of the

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<sup>3</sup> Op. cit., p. 653.

<sup>4</sup> Ibid., p. 652.

<sup>5</sup> Ibid., p. 646.

<sup>6</sup> Ibid., pp. 646-647.

<sup>7</sup> Ibid., p. 650.

of characteristics and attributes: it is ontologically determinate. This marks out distinct rôles for reference and description in judg-This man. Reference and description, it is true, are fused in one act. . . . But the rôle of reference is to point to this ontologically determinate being, the rôle of description is to translate this being into epistemological determinations. The one directs, the other effects, the act of knowing. The one indicates a being already determinate, the other transcribes this existentially determinate being into its conceptual expression in knowledge. Thus reference and description are distinct. One is not absorbed by the other. And . . . the paradox of judgment here disappears." 8

I must briefly pause to point out two inconsistencies in Mr. Gotshalk's general argument which blunt its edge not a little. In the first place, he identifies knowledge with "information" and "interpretation," the elements of which are "concepts" or "universals." He says: "Knowledge, it is clear, is a tissue of universals. The knowing mind can only grasp and proceed in terms of the universal."9 But he appropriates the name of knowledge for a different sort of thing. Ontological qualities and relations, being "particular," can be "known," he claims, by "direct inspection." This implies that judgment is not necessary for the knowledge of "particulars," and judgment can thus be said to "refer" to "existentially determinate being," known as such prior to the "description" of it by judgment in terms of "universal" determinations. Yet the admission is made later on that judgment "indeed is the constructive activity within knowledge and if there were no judgment there would be no knowledge. It is a sine qua non of knowledge." 10 If this is so, so-called ontological qualities and relations are, on Mr. Gotshalk's own view of the "necessity" of judgment, either actually unknowable or knowable only through judgment which indicates and transcribes them by one and the same act. the second place, the admission that in judgment reference and description are "fused in one act" is inconsistent with the assertion that "reference and description are distinct." The whole point of the paradox lies precisely in the fact that for any specific judgment reference and description coalesce. It is subsequent analysis which does, and indeed must, distinguish between the two aspects which in any given judgment are always "fused," i.e., not distinct. question is not what analysis does when a perceptual judgment is its object (though here, too, there is the same "fusion" on the part of the analytical judgment which refers to the perceptual judgment and describes it through the same act), but what the perceptual

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<sup>&</sup>lt;sup>8</sup> Ibid., p. 653. 9 Ibid., p. 648.

<sup>10</sup> Ibid., p. 656.

judgment itself does when it asserts, for instance, that "this spire is gray." Here reference is absorbed by description. And this is the paradox in a nutshell.

These inconsistencies apart, Mr. Gotshalk's criticism is vulner. able much more deeply and gravely. Of importance are the fol-

lowing points.

(i) The denial of the paradox, which, as I contend, is involved in the fusion by judgment of the acts of reference and description, is based by Mr. Gotshalk on the prior affirmation of two "realms". the realm of ontological qualities and relations is what judgment "refers" to, and this realm becomes transferred to the realm of epistemological qualities and relations through judgment's "decriptive" act. Is the affirmation valid? The affirmation, I submit, is either meaningless or fallacious. It is meaningless, if it is assumed to rest on knowledge, such as "direct inspection," not involving judgment. Whatever be the revelatory capacity of direct inspection, it is too much to ask of it to disclose particulars as distinguished from universals or ontological entities contrasted with epistemological. How can we know ontological particulars without identifying them as such and without differentiating them from epistemological universals? If direct inspection is the sort of knowledge that discriminates and qualifies, can it be called "direct"? Such inspection, usurping the function of judgment, yet assumed to reveal without judgment two distinct types of qualities and relations, is indeed revelation, but revelation of the miraculous kind. There may be those who intuitively—that is, without judgment—can recognize a particular qua particular, can distinguish it from a universal qua universal, and can apprehend it as something ontological and not as something epistemological. I, for one, can find nothing in my experience to confirm the possibility of such a preternatural feat, and I am forced therefore to believe that no meaning can be attached, prior to judgment, to Mr. Gotshalk's two realms or types of qualities and relations. But if the distinction between particulars and universals, or between entities ontological and entities epistemological, is effected by independent of the control of the contro is effected by judgment, it is fallacious to assume that, before judgment is on the ment is on the scene, a distinction which only judgment can make, is already a valid distinction. Not by such a fallacious argument can the paradox of judgment be explained away. Mr. Gotshalk's argument is in fact ment is in fact a signal illustration of the paradox. He distinguishes by indexes is a light of the paradox. guishes by judgment between two types of qualities and relations. dogmatically assuming the distinction as valid, in order that any judgment subsequently judgment subsequently made, though fusing in one act reference and description many and description, may have its reference allocated to one type, differentiated from the arrangements it. entiated from the second type which descriptively re-presents it. But the very judgment the But the very judgment which produces the distinction between the

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types contains the anomalous fusion between reference and types contains the paradox of judgment is present in the original programment made for the sake of escaping from it! Upon this alone might rest my case.

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(ii) I am far from denying the logical validity of the distinction the particular and the universal. But how can a distincmade in discourse and by discourse, help us in the present case? little reflection will show that the distinction is altogether useless for the escape from the paradox: we are here dealing with formal erms so essentially relative that each is incomprehensible without the ther. Particular is itself a universal term descriptive of anything which in any sense is unique or distinctive or specific; and a uniussal, being indeed such only in so far as it designates identical or milar features assumed to belong to a multiplicity of separate indiiduals, is itself a particular if it is this rather than that universal. i, in other words, it is distinguishable from any and every member comprising a group of universals. To assert of anything: "this is particular," without specifying its particularity, is to make a miversal judgment; and to say of anything: "this is a universal," its universality is specified, is to utter a particular judgment. In with cases we have judgments discharging the act of reference brough the act of description. I deny that there can be significant reference to a particular qua particular: the only particular to which e can significantly refer is to a particular described by judgment those universal terms by means of which it becomes marked off a distinctive and specific. To particulars not judged or described such I can attach no meaning, and Mr. Gotshalk's evocation of hem, as objects of reference distinct from what judgment describes them as being, is an evocation of words which to me signify nothing

(iii) Nor do I wish to impugn the importance of the distinction between the ontological and the epistemological. But this distinction, too, is one which aggravates rather than alleviates the paradox judgment. Only by a strange equivocation can Mr. Gotshalk with himself of the term "ontological." If I understand him wight, the ontological is assumed by him to mean the same as the existent, and the existent the same as the perceptible. But the himself of the term the same as the perceptible. But the existent equals the perceptible, is far from self-evident. These equals are extremely doubtful, not to say question-begging. The designates whatever in any sense may be said to be or to be real. Himself or levels; to identify it with but one realm—the realm of

existence—is sheer dogmatism. The ontological, taken in the most general sense, coincides, if I may quote from the paper under critigeneral sense, contract, cism, "with 'being," that summum genus containing as species both the non-existent and the unreal. Prior to the discriminating and specifying work of judgment, everything imaginable or mentionable has being. It is to the labor of attribution wrought by judgment that we owe the distinction within the sphere of being between the existent and the real. Judgment, in attributing specific properties to 'existence,' spatio-temporal or other, does not annihilate the nonexistent; the non-existent finds lodgment in the more commodious realm of 'reality.' There are non-existent but real things, such as the mathematical infinite and non-Euclidean space, to which judgment can attribute determinate qualities and relations. But the widest ontological area, the area of 'being,' provides room for whatever for any reason can not be said to have the attributes either of existence or of reality." 11 We must here obviously once more appeal to judgment, but judgment can refer to anything specifically ontological only by description, i.e., by qualifying it as logical or substantial, as empirical or transcendental, as physical or mental, as existential or subsistential. The ontological as such, not determined by adjectival description, simply is "the night where all cows are black." The existent, in short, is a selected part of the ontologicalselected by description-and not the whole of it. Mr. Gotshalk's epistemological qualities and relations, though by his hypothesis non-existent, have supposedly some sort of being. And however he qualifies their being, whether as logical or psychological or transcendental, he can not without falling into absurdity qualify them as non-ontological. Equally illegitimate is the equation between the existent and the perceptible. Neither is everything perceptible existent nor is everything existent perceptible. Dream objects and hallucinatory objects are certainly perceptible, but it is not obvious at any rate, it is debatable—whether they are also existent; and the interior of the earth and the other side of the moon, though commonly regarded as existent, are certainly not perceptible. It is useless, therefore, to pretend that we can escape from the paradox of judgment by allocating reference to the ontological, with the meaning of the ontological so equivocal, and with judgment required to indicate quired to indicate and to express through one and the same act its specificity.

(iv) The subsumption under the same concepts of entities as heterogeneous as are (on Mr. Gotshalk's view) the two sets or types of qualities and relations, I find most perplexing. What is the resemblance between the qualities and relations designated as ontological and those defined as epistemological? There must be a sequence of There must be a sequence of the se

11 "The Paradox of Judgment," op. cit., pp. 201-202.

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resemblance between them to justify the common appellation. what sense are they both qualities and relations? Are epistemological qualities and relations, the absolute elements of that "tissue of universals," which Mr. Gotshalk rashly equates with "knowlelge," like the ontological qualities and relations given in specific contexts and never present or presented apart from them? I have shown elsewhere 12 the radical discrepancy between relational enfilies and relational transactions; the former, being de-contextualized subjects of logical judgments independently describable by their logical predicates or properties, are not the specific intermediaries which must borrow their description from the concrete contexts in which they perform the office of relating. It is surely pertinent to ask whether that which is not actually conjoining specific terms may in any sense be called a relation. The same question may be raised with respect to qualities not characterizing some substantive. A specific quality of something, a character specifying a given or present content, this gray on this spire or that red on that sunset, is one thing; but what is a quality adjectival to nothing, a bare universal floating or wandering in the void? What entitles it to the same name? Mr. Gotshalk subsumes under the same concept of relation two meanings apparently incommensurable: the meaning a relation has in exercising a conjunctive function and the meaning it has as a logical universal; and equally heterogeneous are the meanings which he subsumes under the concept of quality: a quality is at once a particular character qualifying a particular content and an abstract entity without definite location or attachment. The subsumption in question may or may not be valid. That is a matter of debate. It is clear, however, that the subsumption rests on a prior descriptive judgment. The judgment which describes qualities and relations as ontological and epistemological is anomalous with a vengeance! How is reference to be separated from description in this Judgment? In describing qualities and relations by two incom-Patible predicates, the reference to the subject, which Mr. Gotshalk claims can be separated from its description, may be reduced to one of three forms of absurdity. It can be shown that the referred subbecomes on Mr. Gotshalk's own view either contradictory or meaningless or indescribable: contradictory, if the reference is to Something at once particular and non-particular, perceptual and nonperceptual, existential and non-existential; meaningless, if the referonce is to something merely epistemological, to something having hothing to re-present except itself; indescribable, if the reference is to something exclusively ontological, which, being present or presented as particular in a perceptible context, is neither a universal Are Relations Effable?" this Journal, Vol. XXVII (1930), pp. 309nor a concept description ineluctably turns it into. In other words, the paradox of judgment can not be denied by the judgmental assertion, itself inherently anomalous, that qualities and relations constitute an identical logical subject referable and describable by mutually exclusive predicates.

These considerations suffice to invalidate Mr. Gotshalk's argument that a judgment postulating two types of qualities and relations can remove the paradox which, as I hold, inheres in any judgment, owing to its fusion between the acts of reference and description. Mr. Gotshalk is not content with the removal, by his method of partition, of the paradox; he also rejects as "invalid and false" the assumption which lends to the paradox a measure of plausibility. With this aspect of his criticism, since it rests on a misunderstanding, I can deal quite summarily.

(2) Mr. Gotshalk seems to confuse an assumption with the consequence or consequences it entails. The only assumption from which, in my opinion, the whole paradox proceeds, is the fact that judgment fuses into one act both the reference to the real and the description of it. Hence, as a consequence, and from the point of view of any given judgment, the real referred to is either what judgment itself describes it as being, or else it is something indeterminate, for determination is precisely what the descriptive act of judgment is called upon to effect. I do not say that the real is intrinsically or inherently naked of characters-the night where all cows are black; I say only that it must appear as indeterminate from the standpoint of any judgment, on the assumption that its reference is other than its description. To say that judgment refers to something ontologically determinate is to say nothing at all, for, as I have shown, the ontologically determinate, merely as ontological, is tantamount to indetermination until we ascertain by knowledge involving judgment what kind of ontological determinateness we are dealing with, whether the determinateness merely is, or whether it is real, or whether it is existent. The word "being" has many meanings, and so have the words "reality" and "existence"; 13 the unspecified use of the term "ontological," including everything and excluding nothing (for nothing, too, the notorious "null-class" of logicians has seen logicians, has some sort of being), is utterly meaningless; the specified use of it is a sort of being), is utterly meaningless; the specified use of it is a sort of being). fied use of it involves judgment, specification being the work of judgment nar excellent ment par excellence. If the assumption is valid that in judgment the acts of refere the acts of reference and description coalesce, then the consequence to be drawn from it is and description coalesce, then the consequence. to be drawn from it is equally valid, namely, that the "ontological" reference of indexes is equally valid, namely, that the "ontological" reference of judgment is either identical with the description of it, and hence no reference is and hence no reference at all, or if not identical, the reference is

<sup>13</sup> See "Some Meanings of the Word Is," by George Santayana, this Journal, Vol. XII (1915), pp. 66-68.

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indeed preserved, but is a reference to the nondescript, to the in the generic sense, in which sense it coincides with the boundless sea of being, wherein float all the unreal possibilities and all the non-existent but real essences.

If we but know, and know truly, what by judgment we affirm or deny, and if the only mode of reference to the real which judgment can establish is by describing it, then have we not in this paradox the veritable locus of the problem of knowledge? Solutions of it rill, indeed must, radically differ. But solutions, to be comparable, presuppose a common problem. I believe that in the paradox of judgment Erkenntnis-theoretiker must find their common perplexity, for all theories of knowledge are concerned with reference to the real and with the possibility of truly describing it. My own solution, indicated elsewhere,14 is a species of epistemological dualism. Because of the paradoxical nature of judgment, I am led to distinguish between the inherently qualitied nature of the real (if I may borrow an expression from Mr. S. Alexander who in turn has borrowed it from Dr. Johnson) 15 and the qualifications of the real proffered in the various systems of human judgments; the qualitied nature of the real is for human knowledge problematic and the human qualifications of it are but hypotheses or experiments whose claim to adequacy must be appraised by pragmatic norms or tests. Mr. Gotshalk, too, is advocating a species of epistemological dualism. His form of dualism may be preferable to mine or mine to his. or differences may perhaps be amicably composed. But whether We differ or agree in our solutions, the problem from which we must start is the paradox of judgment. Mr. Gotshalk's endeavor to deny the paradox has succeeded only in affirming it. And I welcome this indirect confirmation as an added proof that the paradox is genuine. J. LOEWENBERG.

University of California.

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### BOOK REVIEWS

French Liberal Thought in the Eighteenth Century: A Study of Political Ideas from Bayle to Condorcet. Kingsley Martin. Boston: Little, Brown, and Company. 1929. Pp. xviii + 313.

14 See especially, "Subject and Substance," "The Fourfold Root of Truth, and "The Prepositional Nature of Truth," University of California Publication. The Prepositional Nature of Truth, Vol. No. 209-241, and Vol. Publications in Philosophy, Vol. IX, pp. 3-32, Vol. X, pp. 209-24!, and Vol. II, pp. 3-32 II, pp. 3-32, respectively; see also, "Problematic Realism," Contemporary American Philosophy, Vol. II.

15 Space, Time and Deity, I, p. 72.

French Thought in the Eighteenth Century. Daniel Morner. English translation by Lawrence M. Levin. New York. Prentice-Hall, Inc. 1929. Pp. x + 336.

Only the single word "liberal" differentiates the main titles of these two useful books, a faint hint indeed of the contrasts to be found within. The English volume is a thorough piece of research from Magdalene College, Cambridge, and the London School of Economics; while the smaller one from France (in spite of the misleading page totals, M. Mornet's book is about half as long as Mr. Martin's) is a translated vulgarisation by the Professor of French Literature at the Sorbonne. In his own words, Professor Mornet offers "a methodical and coherent history . . . not of a few great men or of a few literary types, but of the intellectual and moral life of the nation from about 1700 to 1789." To attempt this in a small manual invited the dreariest sort of hackwork, but the author has managed to preserve the atmosphere of first-hand scholarship to an extraordinary degree.

Mr. Martin's project is at the same time more restricted (he sticks to the political and omits the literary) and more ambitious. He sets out to "discover what the social creed which we have learned to call Liberalism meant to the eighteenth-century thinkers who formulated and popularized it." The key to the political thought of any period he finds to lie in the conflict between opposing views of human nature, and the peculiar interest of the eighteenth century seems to him to arise from the emergence of a third alternative to the prevailing Christian orthodoxy and Renaissance hedonism. The theme of his book is the effort of eighteenth-century thinkers to work out this new secular religion, which substituted knowledge for Grace as a means of salvation, and offered social progress as at once the criterion and the source of motive power for human endeavor. conflict between these three views, he claims, "remains as real and as interesting to-day as it was before the Revolution," so that "a better appreciation of the historical genesis of this creed and a fuller examination of the intellectual assumptions on which it was built may make it easier, amid all the modern criticism of democracy and progress, to decide whether we are still able to accept this ideal.

Chates, Especially since nowhere, it appears, "except in the United States, where prosperite where prosperite was and states, and the united states, and the united states, where prosperite was a state of the united states, and the united states, and the united states, where prosperite was a state of the united states, and the united states are the united states. where prosperity strangles criticism, do ideas of democracy and progress still command religious respect."

Now the eighteenth century in France sets a trap for the unwary historian in the dramatic simplicity of its apparent "plot" when viewed from the vantage-point of present-day knowledge. grand finale of the Revolution fascinates everybody. Everything else seems mere stage-setting. What went before 1789 can hardly

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the dominance of the gathering-storm motif. But to most of the Frenchmen of 1700 or 1750, things must have appeared difwe forget that they did not realize that they were acting in a mere curtain-raiser. The few who, like d'Argenson in 1753, pay have felt that a crash was imminent, had little or no conception of its magnitude or of the ideas which were to inspire it. And in spite of shelves of research concerning the origins of the Revolution, it remains difficult, if not impossible, for us to forget the Revolution long enough to recover the state of mind of the earlier generations who were, for the most part unknowingly, making the tremendous dimax inevitable. Historians a hundred years hence will probably find it equally hard to resurrect the hundred years which preceded the World War. Everything that was thought or done in Europe from 1815 on is likely to be interpreted as merely leading up to the disaster of 1914-18. But that was not what it felt like to be alive in Europe in 1880 or in 1900. How few, comparatively speaking, even of those who were busily stirring the pot, had any inkling of what was brewing therein?

Mr. Martin's fine volume, by its admittedly retrospective point of view and its unmistakable interest in the present fortunes of what he calls Liberalism, courts this danger of distortion by subsequent events far more than M. Mornet's. The latter's survey of the thought of the century, though brief, is in the century's own terms, relatively undistracted by later developments. The vices of undue compression it could not be expected to avoid: there are many sweeping generalizations, apparent if not genuine superficialities, and tedious catalogues of proper names (eighty of them, for example, out of less than two hundred words of text on page 300). Mr. Levin's translation is only tolerable at best, erring constantly on the side of a too-wooden literalness. His hundred per cent. American zeal to anglicize French expressions, including all book titles, turns the philosophes into philosophers, when, as Mr. Martin remarks, they had the greatest contempt for most of what is called philosophy." At the same time the book's many illustrative touches, drawn skilfully from a wide acquaintance with the background of the period, rescue it from anything like banality, and one looks forward to Professor Mornet's more ambitious promised study of the intellectual origins of the Revolution. Mr. Martin's style is more in the tradition of leisurely exposition, being adequate, but with few of the flashes of brilliance which come so unfailingly from his master, Professor Laski. He is wise enough to let his heroes do a good deal of talking for themselves. He calls his method a combination of three common ones: the "great thinker," the Philosophic, and the chronological. Since he is interested primarily in the evolution of a set of ideas, he stresses personalities only where, as in the case of Rousseau, the man stamps himself indelibly on the doctrines. This method yields solidity without undue dryness, and his book presents for the first time in English a careful and comprehensive account of French Liberalism from Bayle to Condorcet,

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One of the acid tests of writers on the eighteenth century in France is generally acknowledged to be the much-mooted question of the influence of the philosophes. Did ideas make the Revolution, or were they relatively minor factors? For the most part, Mr. Martin is content to follow what he recognizes to be the best account we have, that of M. Roustan in Les philosophes et la société française In it, however, he discerns "two instructive mistakes," the first being overstatement of the influence of the philosophes, and the second a failure to distinguish two separate historical problems: what the philosophes said, as against what actual influence their sayings exerted. Concerning the latter, Mr. Martin admits that M. Roustan concentrates "for the most part" on their actual influence, which was "to bring the situation to a head by expressing the grievances of the dispossessed and even converting a large part of the noblesse itself." No one any longer doubts that the economic, social, and religious conflicts before 1789 predisposed the nation to listen to revolutionary ideas. It is almost as obvious today that the philosophes supplied the intellectual and moral indictments which caused aristocracy's loss of faith in itself,2 and aroused hopes of a freer and happier society among the discontented bourgeoisie. As Mr. Martin says, "the struggle between the privileged and the unprivileged underlay all other conflicts," but he does not sufficiently make clear that it was economic misery which in turn underlay the struggle between the nobility and the third estate. It has often been pointed out that this misery was as great, if not greater, in 1753 than in 1789, and yet there was no Revolution in the former instance. That was undoubtedly because, as M. Mornet puts it, the philosophes had not yet made men "lose the habit of respect for tradition" and "apt to reflect upon revolution and democracy," although, as he contends, the philosophes taught neither. What they did do, apparently was the philosophes taught neither. parently, was to make the French world safe for blasphemers, no inconsiderable calciconsiderable achievement in the century of La Barre!

a preface by H. J. Laski

<sup>&</sup>lt;sup>2</sup> A recent writer has called this, in Gilbert Murray's famous phrase, a secon? "failure of nerve." Cf. Vedder, J. N., "The Nature of Romanticism" in Faculty Papers of Union College, May, 1930, p. 108. For a view which questions the wide acceptance by the nobility of the "philosophical ideas," wide Sée, Henri, Economic and Social Conditions in France during the Eighteenth Century, pp. 106-8.

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It is not easy to talk sense nowadays about the philosophes' alleged lack of democratic leanings. Mr. Martin, agreeing on the with M. Mornet, explores the matter in far greater detail. He shows that Voltaire, for example, was primarily concerned with the fight for civil liberty, and that "it was only when men had come to doubt if it could ever be secure without popular government that liberty began to include democracy." Meanwhile it was enough to reiterate "écrasez l'infâme!" As for Diderot and his fellow Enevelopaedists, they "hid things from themselves as well as from the censor." For in politics, our author holds, although they did not see it, "their utilitarianism led to democracy. For if both ability and character were the result of experience, social distinctions were arbitrary and accidental. By nature one man was as good as another. . . . " This doctrine became with Helvétius the "greatest happiness of the greatest number" principle, which "seems naturally to lead to some form of democracy." Yet Helvétius barred the poor and the uneducated from his "greatest number," and Mr. Martin stretches a point in proclaiming him even "within limits, a democrat." Utilitarianism is too easily turned against democracy, as witness in our day the incessant reminders that trains run on time in Il Duce's anti-democratic Italy. Modern dictators are ready to beat the utilitarian democrat at his own game of promoting the "greatest happiness of the greatest number" without going to the trouble and expense of consulting those whose happiness is being promoted.

What is too often forgotten in the whole discussion is that, as the author indicates, democracy retained for the philosophes its Aristotelian connotations of fourth-century Athenian demagogy. It awoke visions of tyrannical mob rule, of government by the marketplace, of self-appointed leaders swaying the ignorant by sophistry. It seemed altogether too unstable a political device even to be considered altogether too unstable a political device even to be considered. sidered by absolutist France, for it "assumed that law proceeded from the transient wills of men, not from the eternal and irrevocable ordinances of God." It was also commonly believed that democracy Was suited only to small territories. Rousseau confined it to the citystate, and added that in any case it was a system for gods, not for men. "Yet," says Mr. Martin, "it was he more than any other man who gave the idea of popular sovereignty its vogue: it was he who provided the slogans and the arguments which enabled the founders of nineteenth-century representative government to de-Scribe their system as democracy."

Rousseau offers another crucial testing-point to the critic of his century. "Men will always be sharply divided about Rousseau," as Mr. Martin says. M. Mornet escapes most of the major contro-

versies by slighting politics, treating Jean-Jacques simply as the man who starts out to be a philosopher and who ends as a "pragmatist" of the heart, explorer of the "fatal sweetnesses" and "delightful sadnesses" of the human feelings, advocate of the new virtues of sensibility unsullied by reason. What a pity that the Churchmen failed to recognize in Rousseau that religiosity which was to lead so many romantics back to religion itself, and hounded him instead!

Mr. Martin tackles the knotty problems of Rousseau's politics (both theoretical and practical) and emerges triumphantly from the ordeal. Rousseau the theorist turned "what had hitherto seemed a contradiction," absolute individual rights versus sovereign state authority, "into a truism." The vox populi was thereby transformed from the "untaught folly of the mob" to "the vehicle of divine revelation" almost overnight. Yet this was but a "facile assurance," except in the case of very small groups, and Rousseau and the more far-sighted of his contemporaries soon turned to Federal. ism as the solution. When he came to practical applications in Corsica and Poland, Rousseau, thanks to his distrust of human prejudices and passions, showed himself a timid disciple of the mildly liberal Montesquieu. His central faith, however, both in theory and in practice, was that "democracy is the only form of government which can ever be good at all in the long run, since it is the only one that offers men and women freedom, and which may in time regenerate them, and lead to the formation of a truly social community."

The author rightly holds that "the key to Rousseau's philosophy is in the Confessions," and that it was "the spirit which infused Rousseau's life and work which was the secret of his immense influence." The same might be said of all the eighteenth-century liberators—most of them were prophets, all of them were moralists. They left a moral heritage, not a philosophical or a scientific or even an esthetic one. It is pathetically easy to show that they lacked the sciences which they sorely needed, and that "the physics, biology and psychology of the eighteenth century have been largely superseded. But the philosophes stand in no need of our commiseration over missing the nineteenth and twentieth centuries with their positivistic enlightenment. What if they do seem to us "somewhat naïve" as they match absolutes with their enemies, in woeful ignorance of statistics and all its work of their enemies, in woeful ignorance of statistics and all the apparatus of sceptical relativism? We need not be shocked to be not be shocked to learn that the apostles of Liberalism were often sadly illiheral sadly illiberal, that much of our own vaunted freedom may be due to their jongraphs. to their ignorance and dogmatism in combating Leviathan and l'infâme. Breadth l'infâme. Breadth of mind and copiousness of information are rarely the virtues of rarely the virtues of warriors and prophets. The philosophes saw

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n are s saw the crucial issues far too simply, and in an absurd setting of supposed facts, but they saw them, and made others see them, in bold poseu is shining relief. It was thus that they were able to move their fellows, and to state the fundamental moral judgments upon which the gospel of progress (now a solely American delusion?) still rests. Whether or not, as Mr. Martin claims, they were "attempting to offer that spiritual leadership of which the Church was no longer

capable," that was what they succeeded in doing to an amazing extent. They taught that "by reason man may be the master of things, that he can imagine a society in which all men enjoy freedom and happiness, and that he can deliberately create the society he has magined." We may dismiss the "presumptuous enthusiasms" of their "generous and fighting creed," we may regret the degeneration of the ideal of progress to the notion of mere acceleration, but we can not withhold our gratitude from the men of the eighteenth century who cleared the way for the lay-religion of social futurism which is inescapably our own.

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#### JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. Vol. XXXIX, 5. Clerselier and Rohault: Albert G. A. Balz. Notes on the Logic of Grammar: V. J. McGill. Beauty and the Good: Marjorie S. Harris. The Knowledge that is in Instinct: W. D. Lighthall.

REVUE D'HISTOIRE DE LA PHILOSOPHIE. 4º Année, Fasc. 2. La notion indienne de liberté: P. Masson-Oursel. Il problema dell' errore nella filosofia greca prima di Platone: A. Levi. La morale de Nietzsche dans le "Zarathoustra": Ch. Andler. Une lacune dans le ler livre de l'Éthique à Nicomaque: H. Margueritte.

REVUE NEO-SCOLASTIQUE DE PHILOSOPHIE. XXXIIº Année, No. 27. Les ressources latentes ed la doctrine augustinienne: M. Blondel. Ordonnances humaines et obligation de conscience: P. Harmignie. L'authenticité du "De Potentiis Animae" d' Albert le Grand: O. Lottin. Bulletin de Métaphysique (suite): N. Balthasar.

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### NOTES AND NEWS

Jay William Hudson, Professor of Philosophy at the University of Missouri, is on leave of absence for a year's study abroad.

Ray H. Dotterer, formerly Professor of Psychology at Franklin and Marshall College, has gone to Pennsylvania State College as Professor of Philosophy.

G. W. Allport of Dartmouth College, goes to Harvard University as Assistant Professor of Psychology.

Theodore F. Karowski has been appointed Assistant Professor of Psychology at Dartmouth College.

Donald Cary Williams goes from Harvard University to the University of California at Los Angeles as instructor in philosophy.

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Limitations. A. A. Merrill.

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## THE JOURNAL OF PHILOSOPHY

THE PLACE OF DEFINITION IN RELIGIOUS EXPERIENCE

WEFACE in these latter years a degree of vagueness in religion which is perhaps without parallel in the history of Christianity. Theological controversy has reached the most central ideas of traditional Christianity and even the layman is greeted with articles in the popular press as to the need of God in religion. last remaining landmark of the familiar religious landscape has been obscured by the smoke of theological battle; and the innocent man-in-the-pew finds himself puzzled as to what religion is when it is God in whom, despite all differences about Christology, sacramentalim, polity, or mystical insight, religious experience has been so definitely centered.

The layman's confusion is paralleled in the pulpit. Thanks to Schleiermacher and the romanticist theologians, religion has shifted is ground of authority for many a Christian minister from belief to feeling, from definite concepts to indefinite consciousness of dependence or awe or love or reckless trust. Recent anthropology has only added more wet wood to a smoky fire by protesting against intellectualist" interpretations of religious origins, and giving us place of Lang's primitive monotheism Marett's mana experience, the sense of mystification. With Rudolf Otto this non-rational feeling is made normative for all religious experience as what he calls the numinous." Mana or numen connotes not a definite object, an indefinite subjective feeling. Students of Codrington's Tork on mana among the Melanesians will recall his inability to find by logical concept to describe it: it is now a substance, now a lotency of certain substances; or it is a property of one object and again it is not attached to any object. The term becomes a synonym the subjective experience of puzzlement, or awe.

Religious educators, trained in a psychology of religion that owes to this newer religious anthropology, then develop a technique the character education which shall be able to make provision for pupil to experience mana in his own way. The important thing becomes the influence of the mana in a life of ethical power. The the influence of the mana in a life of control direction and determination of this ethical power in terms of direction and relogity. religions becomes the subject of innumerable tests. Definition of religious concepts is not attempted save as studies are made of the htteresting variety of ideas by which the undefined experience is

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described. Theology is thus relegated to a descriptive function with no particular normative value: religion has become emancipated from specific ideas. Indeed, hope comes to be entertained of a world religion in which mere differences between nirvana and the kingdom of God, between the divine Christ and the eternal Buddha, are lost in the great community of religious feeling directed into productive moral ends. How happy Albrecht Ritschl would be to know this complete subordination of metaphysics to ethics! Yet even Ritschl held to a definite center of religious experience: Jesus the Savior.

It is the aim of this paper to raise three questions as to the place of definition in religious experience. The first of these is occasioned by the confusion of the lay seeker after religious experience, who wants to know how to tell when he is religious. Frankly, he wants a label that will assure him, in a supposed experience of religion, that the goods are genuine. His father knew religion when he saw it, thanks to the old dogmatic theology. It was easily detected. A feeling of misery after reflection on one's obvious failures was a sense of sin; and God-an individual Person of supreme authoritycould, upon urgent request, transform this organic wretchedness into a light-hearted sense of relief. This was "getting religion." Not every transition from misery to joy was religious. Two specific terms were involved: sin and God; and both of these were defined in the Bible or by the minister. The liberal layman to-day is puzzled; and his confusion is accentuated not only by the lack of clear theologies, but more by the disclaimers of theology among religious leaders. My first question, then, is: Is there such a thing as religious experience without theological concepts?

1

That there is undefined awareness in religious experience seems to be clearly attested from two sources: the mystic and the child. The former may know about theology, but in the mystic illumination it is not an operative factor. The child does not know theology at all, and yet who would deny genuine religious experience to the child? Let us, however, examine these two cases more closely. Since the latter may be treated more expeditiously let us take it first.

The fact that a child has a religious experience depends on two things. First it is branded as religious by the adult only on the basis of a definition of "religious," and if the experience lack theological content then some characteristic attitude of familiar religious experience is seized upon as definitive. Beyond this it is presumption to go on claiming for the child genuine religious experience. On the other hand, the child having such an experience is already sufficiently a member of the group to have acquired a collection of meanings, some of which it recognizes as religious

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But this recognition is a result of training and reflects definitions But the group. The labels of religious experience, whether terms of Bantu animism, Hebrew legalism, Christian sacramentalor Humanist societism, are inevitably incorporated in the hild's thinking, precisely because it develops in a group permeated by these definitions of religion. When parents set out to rear children "without any religious notions" they either belie their plan mith unconscious inculcation of ideas, or else the child secures its ileas from other group relationships. The religious experience of the child is always defined whether those definitions are systematized into a self-consistent creed or not.

A more subtle problem confronts us when we deal with the mystic The mystics have always referred to their experiences as ineffable, indefinite, and undefinable. If they attempt description at all, it is more apt to be in poetry. Through such a medium they give their hints, to quote a modern writer, "by the rhythm and the glamour of their verse, by its peculiar quality of suggesting munitely more than it ever says directly." Let the mystic tell his tale through poetry. Darrell Figgis describes his religious experience thus:

> And I, tho' I scarce knew what chanced, Caught in the measured rhythm, and tranced, Was yet raised to a terrible dread Of the great hush that wrapped the hills: That spell upon the standing hills. I could have fled, but that the awe Of an unfurling and strange might Had me transfigured in its law. And yet the fear that stirred in me Was mingled with a wild delight That thrilled with very ecstasy Through every nerve and vein and mesh Building my quivering house of flesh.2

Lest this should seem to prejudice the case with complete absence of intuitive insights, note Francis Thompson's description of religious experience as the time

> When to the new eyes of thee All things by immortal power, Near or far, Hiddenly To each other linked are, That thou canst not stir a flower Without troubling a star. . . . 3

<sup>1</sup> Oxford Book of English Mystical Verse, p. vii.
<sup>2</sup> Slaik. <sup>2</sup> Slaibh Mor, stanza ii.

The Mistress of Vision, stanza xxii.

And Professor Pratt clearly avers that the mystical experience "is And Professor Frate creating the presence of a being or reality the sense or feeling of . . . the presence of a being or reality it is not a conclusion one reaches by not belief in it . . . ; it is not a conclusion one reaches by thought; it is, instead, an immediate or intuitive experience." 4 Professor Wieman even describes religious experience as "experience of an object, however undefined. . . . '' 5

The basic contention throughout these statements is the same. It is to the effect that there is a fundamental type of religious experience in which the object of the experience is not defined. On this assumption rest so many presentations of religious experience that it is important to examine the assumption. The writer is not so sure of his position on this crucial question as he feels in his answers to the two other questions in the latter part of the paper. The present critique is therefore submitted in the hope of contradiction where the criticisms are invalid.

Behind the assumption that religious experience may be had prior to any definition of its object lie certain presuppositions as to the nature of knowledge. Classical rationalists all regarded "the human reason" as a distinct entity resident in the body and passing in review the sensations which the body secured. It was the function of reason to organize these perceptions into concepts. On such a basis it was quite easy to understand how awareness of objects might oc-Immanuel Kant cur before the objects had been defined by reason. -who, by the way, regarded mysticism as a delirium 6-insisted, however, that the mind set down in advance certain a priori conditions or "categories" to which perception had to conform. Yet Kant never resolved the dualism of pure reason and practical reason, of understanding and moral intuition. In so doing he perpetuated, and even strengthened, the distinction between awareness and definition.

The resolution of this dualism was to wait upon later developments in biology, if indeed it may be said to have been resolved at So far as the psychological implications of the evolutionary biology are concerned, we may find them very clearly stated in the writings of John Dewey. The new note was struck in a relatively obscure article of the new note was struck in a relatively obscure article of his, published more than thirty years ago in the Psychological Paris, He Psychological Review, entitled "The Reflex Arc Concept." there pointed out that this concept as used currently in psychology presupposed a page in the presupposed a page in the psychology whereas, presupposed a passive organism merely awaiting a stimulus, whereas, increality, the crossive organism merely awaiting a stimulus, it assumes increality, the organism is always active. In its activity it assumes a constantly changing a constantly changing run of attention according to the adjustments

4 Religious Consciousness, p. 337.

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<sup>5</sup> Religious Experience and Scientific Method, p. 5. 6 Religion, p. 273.

<sup>7</sup> Vol. III, No. 4.

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hereas, ssumes stments it is making; and any stimulating object which it perceives is perceived in terms of the organic condition at the time. The situation therefore draws up into itself the antecedent condition of the organism, which in turn has been determined by preceding situations. Thus past experience functions in present experience, and defines the meaning of the object. Lest this last statement appear to be a jump, let us briefly state how a meaning is given. Every object of experience is branded, as Professor Mead puts it, with the initials of the observer. What it means is, for him at least, determined by the responses it stimulates in him. But his responses are also conditioned by the activity of his organism at the moment when the object becomes visible or audible, etc. Therefore the meaning of the object is a result of its relation to the background of the observer. Definition, then, actually accompanies the perception, rather than follows it.

How does this bear upon the problem of undefined awareness? Its implication is that such a process is based upon a static rather than a dynamic view of consciousness; in a word, that a psychology based on the new biology sees in awareness an active response into which are taken up the previous ideas (or meanings) of the experiencer. Nay more: the previous meanings are operative as defining factors in the awareness, giving it content to meaning.

Some will accuse Mr. Dewey of introducing into the quietist's "silence of waiting" the restless activism of the American temperament! Waiting on the Lord seems to become an active search. A more pertinent difficulty is the productiveness of relaxation in yielding insights or intuitions. But to relax is really to shift the run of attention so that, with a different background of interest and meanings summoned, the object is defined with a different, perhaps a new, meaning. This is, after all, the function of this free awareness; and it does not owe its significance to its indefiniteness, but to a new angle of observation or definition. Religious experience without definition is impossible; and hence a background of religious ideas inevitably affects the new experience. Thus theology becomes once again a scout for religious experience, instead of being a mere rearguard or even a camp-follower.

To recapitulate: the assumption that experience may be had of an undefined object rests upon a view of experience which separates awareness and definition, making the latter a result of subsequent nental activity. As long as the older dualism of perception and reasoning, or mind and body, persisted, this was tenable. The idea or organic adjustment, introduced from evolutionary biology into psychology, displaces the reason waiting behind the senses by reason type of organic activity. On this view the perceptions which awareness are conditioned by the set of the organism at

the time of perception. But this set is in turn affected by past experience stored up in accumulated meanings, that is, in ideas. This past experience therefore determines the meaning of the object of religious experience at any given moment. All of which implies that theology is, as indicated early in the paper, that organized collection of religious meanings which enable us to define any new experience as religious or otherwise.

#### II

The second question which is raised regarding the place of definition in religious experience is closely related to the preceding discussion. It is this: What contribution does theological definition make to vital religious experience? Or, in other words, has theology a real place within the religious attitude? The answer to this question can be made only by first analyzing the religious attitude.

The attitude has psychologically two poles: emotions and an ob-It represents the organization of the emotions around an object. The object is always present whether as a person, a thing, a cause, or an idea to which we are, for instance, loyal. All of us are aware of the difficulty of defining loyalty. It may be American Legion jingoism, it may be international friendliness, which characterizes our attitude toward that piece of striped and starred bunting that we call "Our Flag." Now this difficulty of defining any attitude arises because of the wide range of emotions or of objects which may be incorporated within the attitude. This is especially true of religious attitudes which, while usually defined according to the object involved (Jahweh, Humanity, Krishna, Christ), may also be distinguished according to the dominant emotion in the complex The hope of many students of comparative religion that a world religion may be achieved rests upon the fact that certain emotions appear universally in religious experience: dependence or awe or fear or enthusiastic recklessness. It is proposed to make a common that he had been a common tha emotion the basis of the new cult, rather than differentiating by the varied religious objects. Because of this claim that a world religion will supplant all traditional faiths it behooves us to look more closely at the reletiat the relative importance of emotion and definition in the religious attitude.

Two extremes continually appear in religious experience: vague sentimentalism, and precise but dry-as-dust intellectualism. Now, these two extremes indicate the unbalanced organization of the attitude with over-emphasis on the emotions or on definition respectively. The sentimentalist in religion is he who seeks arousal of emotional response without organizing that response around an explicitly defined object, person, cause, or idea—that is, around and defined meaning. An outburst of such emotion may be produced

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be conflict without clear statement of the way to resolve the conflict is some definite commitment, and we have the ephémeral excitement much revivalism. It may be an emotional fervor aroused by a famatic actor's presentation of vague dreams, and become an atachment to a person mistaken for religious loyalty. It may be ente emotional expression unable to define its object, and lapse into unproductive and unsocial mysticism of the type that borders on psychic disorder. The dry-as-dust intellectualist, on the other hand, has good ideas.

but no fervor. Emphasis is laid upon the definition in the attitude the neglect of emotional expression. This is the curse of our theral movement in Christianity and is an unfortunate phase of the reaction against orthodox definitions. The modernist in such a case becomes so preoccupied with redefining our objects of Christian faith that he lapses into a sort of scholasticism. Reason becomes the whole freligion to him; and people with wrong ideas are branded as hopeless. Here we have again an unbalanced type who concentrates upon the process of definition and fails to organize the emotional drives within his attitude. Only by this analysis can we explain the "tired radical" in religion, who coming from ultra-conservatism into a modernist group becomes acutely aware of the theological conflict, ie, the conflict of definitions, and makes his conflict (precisely because conflict engenders emotion) the crux of his religious ex-Perience. Then, later, to the amazement of his friends, he suddenly leaves the very ideas of modernist theology for which he has conlended and finds peace in some form of esthetic sacramentalism or reactionary orthodoxy. He had failed to organize his emotional life around his redefined concepts; and religious fervor is saved at the tost of liberal doctrine. Often fervor is sacrificed to intellectual accuracy; and it is not easy to say which man is better off. dreary intellectualism of so many "emancipated" theological students gives meaning to the phrase "theological cemeteries"; and the religious futility of such men brings theological definition into disrepute.

What is needed to resolve this dilemma is a different view of theological definition: the treatment of theology in terms, not of rationalistic systems, but in terms of experiental guarantees. View, which carries over into theology the method of the historicalcritical study of the Bible, treats theologies as symbols of religious attitudes in which the emotional satisfactions (connoted by salvahat Door defined in terms of socially experienced values. This is the known Mathews means by "doctrines as social patterns." the known sources of security, new experience, recognition, or intihate response are derived analogies for describing the religious

<sup>8</sup> Journal of Religion, X (1930), 1-15; cf. his The Faith of Modernism.

sources of satisfaction. Definition is thus a concomitant of emotional organization and has a creative function in the production of religious attitudes. To pursue the psychological parallel to Dean Mathews' sociological analysis: when theologians change the metaphors into literal descriptions they distract attention from the emotional phase of the religious attitude to exclusive preoccupation with the defining process; and an intellectual attitude replaces the religious attitude with accompanying decline in religious power. For the definitions which we call theology are really symbols of emotional realities, of organized emotional experiences; and serve their function when they succeed in making the emotional values of religious experience an integral part of social experience. By such a process religion is socialized and the religious person becomes a well-integrated, social character. The love of God becomes love of men, when God is defined in terms of those lovable objects which are found in common social experience.

In brief, then, the task of theology is to be understood in terms of an analysis of what constitutes a religious attitude. As we have seen, any attitude has two parts: emotions and some object or idea which is called a value. The attitude is formed when the emotions are organized around this defined value. But the value is also defined in terms of its relation to the experiences out of which the emotional reactions arose. Thus the religious attitude is found in different people-and indeed within the same person at different times -drifting to one or another of the two poles. If emotions are expressed without any clear definition of their object we have sentimentalism. If the process of defining is conducted without reference to the emotional factors, we have intellectualism. functions within the religious attitude as a process of definition in which the terms of definition are derived by analogy from social experience. These terms connote the emotional guarantees which the religious attitude embodies; and hence the terminology of the theological doctrine is metaphorical. That is, it seeks to convey the emotional quality of religious experience by reference to analogous satisfactions for it factions familiar in group experience by reference to analog defining function of the result of the defining function of the result is the result function of theology in religious experience: it makes explicit the central objects of religious experience: it makes the stage for further development of the stage for further development. further development of religious attitudes.

III

This discussion has perhaps served to indicate the broad outlines at may be followed as that may be followed for a study of the relations of theology and philosophy. In philosophy, In philosophy. In philosophy as classically understood definition becomes an end in itself. comes an end in itself. Speculation is really the process of relating definitions logically to definitions logically to one another. As such it may be carried on

cithout received this deta do relate import ( the exp perience and a nhysics ician's experier tion of mective Philosop abjects religious perience phy of definitio

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ithout reference to the vital experiences from which the definitions received their content, and the term "abstract philosophy" suggests detachment. In view of the fact, however, that the definitions brelate to vital experiences, these philosophic speculations have an ipport often overlooked: in relating the definitions they also relate the experiences indirectly and thus set a particular area of life-exprience in a wider setting. This is the justification of metaphysics; and a closer examination of the pragmatists' objections to metaalysics will show that protest is raised not against the metaphyigian's search for perspective through temporary detachment from emerience. This protest is, rather, against that playful manipulaion of abstract definitions which fails to achieve any practical perspective; and fiddles to a logical tune while the throbbing city burns. Philosophy, then, takes the definitions or concepts of theology and whiests them to logical scrutiny; seeking to relate the definitions of religious experience to definitions secured from non-religious expriences such as science and even the logical process itself. Philosoply of religion, then, is the relating of religious definitions to other definitions with the interest centered upon the religious concepts. Because religious experience is so universal a phase of experience, every general philosophy has to treat the religious concepts.)

Now, there is here an important contrast between theology and philosophy of religion. Because of their common interest in the definitions of religious experience they are often confused. But they may be distinguished by the nature of their definitions. As we have sen, definitions seek the meaning of experience in relation to the furrent trend of behavior: a piece of willow is defined as a club, a at, a splint, or a staff according to the situation in which it is encountered. If we use a bat as a splint, knowing that it is also a bat, hat simply means that we have brought our memories of baseball into his first-aid situation. The logical problem as to whether it has technically ceased to be a bat in becoming a temporary splint is wickly dismissed by the first-aiders as irrelevant, if not undue levity. literally, it is not a splint; for practical purposes it is. This attihide which the first-aiders feel toward the logician is very much the attitude of the practical-minded theologian toward the philosopher. God is a very present help in time of trouble," whatever the contells the logically. If challenged to explain how God lelps, the theologian has recourse to the familiar assistance and apable comfort which a father gives by way of making the term htelligible to common sense. In this way God becomes Father, King, Creaton December 2012 11 this way God becomes Father, King, Creator, Preserver, Savior, etc. The terms are analogies, akin to the metaphors of poetry, to explain how men experience for them-Whes the Something which, they have been told, is found in the world. That is, they have been told, is round. That is, they terms of philosophy are as literal as possible.

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are definitions of vivid individual experiences expressed in terms only of the highest common denominator which they share with other definitions. In this process of logical comparison, only the most exact meanings are admissible; and the rich suggestiveness of the metaphor becomes the bare precision of the literal term. This explains why the philosophic concept is religiously barren, except for the trained philosopher who reads back into it (for his religious purposes) the rich variety of vivid connotations from which he has abstracted the term. But woe betide the unwary theologian who reads into the philosophic concept a vivid meaning which the accusing philosopher has not included! By comparison with the strict literal. ism of the logician, the theological symbols are "loose," "confused," "sentimental." They are in truth as sentimental, loose, confused as poetry.

What, then, are the claims of philosophy upon theological terms? They are the claims that general experience may always make upon particular sorts of experience: the claims that all experience is a unity and that, therefore, each part must find its meaning in and for the whole. It is often said of some people that their whole life is a religious experience. What seems to be meant by such a statement is that the attitudes developed in religious expérience characterize all their relationships. In such people their philosophy of life is truly their religion, and vice versa; for they have thoroughly integrated their religious values in their total experience. Psychologically, they have done two things: they have assimilated all their objects of experience (friends, business, government; art, physics, or recreation) to the religious object; and they have transferred to these others the emotional attitudes developed toward the religious object. St. Francis loved the birds and Lady Poverty as he loved God. But such assimilation, if it move always into the narrower ellipse of the religious attitude, may develop fanaticism: the use of uniform interpretation for all experience. It is a function of relation of relationships. tion of philosophy to make this assimilative process a broadening process, by making explicit the new meanings which are being at tached to the religious definitions; so that the attitudes are also made more comprehensive significant the new meanings which are also made more comprehensive significant the new meanings which are also made more comprehensive significant the new meanings which are also made more comprehensive significant the new meanings which are also made more comprehensive significant the new meanings which are also made more comprehensive significant the new meanings which are also made more comprehensive significant the new meanings which are also made more comprehensive significant the new meanings which are also made more comprehensive significant the new meanings which are also made more comprehensive significant the new meanings which are also made more comprehensive significant the new meanings which are also made more comprehensive significant the new meanings which are also made more comprehensive significant the new meanings which are also made more comprehensive significant the new meanings which are also made more comprehensive significant the new meanings which are also made more comprehensive significant the new meanings which are necessarily significant the new meanings which are necessarily significant the new meanings which are necessarily significant to the necessarily significant the necessarily signific more comprehensive, and religious meanings grow apace with life.

It is the function of theological definition to indicate what such an ect is in towns of theological definition to indicate what such an extension of the old in the control in the contro object is in terms of the emotional construct which it symbolizes. For this reason that For this reason theological concepts are metaphors of speech: they describe the objects. describe the objects of religious attitudes in terms of the social experience of the grown to the grow perience of the group. Religious experience can not be totally independent of these dependent of these concepts any more than personality can be totally independent of the But when the social independent of the group in which it grows. experience of the group has other references than the religious,

9 Cf., H. N. Wieman, Wrestle of Religion with Truth, ch. XV.

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comparison of religious with other concepts gives rise to philosophy of religion. (It is noteworthy in this connection that the Jews dereloped a philosophy of religion only in proportion as their social life became secularized.) The contribution of philosophic definition to religious experience lies in relating this experience to life in its other aspects. However, when this process of definition is pursued to the point where the vivid experiental connotations of the religious terms are neglected, then philosophic speculation may cease to have religious significance. Under such conditions it is the task of theology to remind the philosopher of the religious connotations of its terms; to call him back from logic to life, from dehydrated concepts to theological symbols warm with the currents of human religious striving. If the theological symbols seem themselves to be cold and meaningless, their vivid meaning may be found in history.

#### RÉSUMÉ

The supposed simple, undefined awareness of the religious experience does not exist psychologically; since the reactions which constitute such awareness are determined by a prior "set" of the organism, part of which is the ideational background of the experiencer. Furthermore, the "religious" character of such awareness depends upon the arousal of religious attitudes within the experience. But the attitude includes a definition of the object or idea around which the complex of emotions is organized. So far as religious attitudes are concerned these organizing concepts are its theological concepts. But theological concepts are themselves closely bound up with the emotional life which is so vital a part of religion. Accordingly, they offer definitions of a metaphorical sort: they seek to define the significance of the attitude in terms familiar to social experience and rich in emotional suggestiveness. But for this very leason they encounter the logician's charge of being loose and sentimental. Because of philosophy's preoccupation with exact meandetached from the incidental particulars of experience, its terminology is both productive and handicapped in the field of religion. It is religiously productive in so far as it sets the objects of religious experience in a wider setting and thus serves to integrate religion in life as a whole. Philosophy of religion can not, however, have ever, reproduce with its logically abstracted terms the vivid experiences tiences out of which the terms first took their rise. The place of definition in religion, then, is to maintain the integrity of the religious attitude, and to save religious experience as an organized Thole from disintegrating into that emotional chaos which we call the times of the concern for sound lefthitical content and all vof the theodefinition (in which philosophy is so important an ally of the theologian) must not be allowed to become so much an end in itself that it leaves the emotions to riot while it itself lapses into devitalized speculation.

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### THE RELATIVITY OF INERTIAL MASS

THIS paper is concerned with the relativity of inertial mass and its connection with the special theory of relativity. Certain conditions that are relative to the proof of the identity of inertial mass and energy may be noticed.

As is well known, the relativity of inertial mass of a body is the variation of the measured mass with a change of coördinate systems. The relativity is the relativity of measured values of the mass, which, of course, obey the transformation equations. Thus if  $m_0$  be the mass of a body measured from a frame in which it is at rest and m its value measured relatively to a system in which it is moving, then

$$m = m_0 \left( \frac{1}{1 - v^2} \right)$$

$$= m_0 \left( \frac{1 + \frac{1}{2} v^2}{c^2} \right)$$

$$= m_0 + \frac{1}{2} \frac{m_0 v^2}{c^2}.$$

Where velocities are small,  $\frac{1}{2}m_0v^2$  approximates to the kinetic energy of the moving mass divided by the square of the velocity of light. The formula which gives the approximate quantitative relation between the measured increase of mass and kinetic energy is sometimes regarded as a proof of the identity of inertial mass and energy.

This, however, can not, strictly speaking, be regarded as the case. All that is involved here is the relativity of measured values. The relation between mass and energy as a physical relation should not depend upon an equation relating space and time measurements. That is, it should not depend upon coördinates, but as a physical relation should be independent of coördinates. Also, such a quantity as  $\frac{1}{2}m_0v^2$  possesses no direct physical reality. It is not, as a physical preperty, definable with respect to coördinates. Consequently, it is difficult to regard its presence as capable of establishing a physical identity. The proof of Einstein establishes the relation. It is worth noticing the basis of the proof.

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in one system and moving in the other. Then let the body radiate energy of the amount 1/2L in opposite directions, the amount measured relatively to the system in which the body is at rest. Let  $E_1$  and  $H_1$  be the energy content measured after radiation and with respect to the two systems. Then,

$$E_{0} = E_{1} + \frac{1}{2}L + \frac{1}{2}L,$$

$$H_{0} = H_{1} + \frac{1}{2}L \frac{1 - v\cos\phi}{\frac{c}{\sqrt{1 - \frac{v^{2}}{c^{2}}}}} + \frac{1}{2}L \frac{1 + v\cos\phi}{\frac{c}{\sqrt{1 - \frac{v^{2}}{c^{2}}}}},$$

$$H_{0} = H_{1} + \frac{L}{\sqrt{1 - \frac{v^{2}}{c^{2}}}}.$$

The difference of the energy before and after radiation in the two systems is only the difference of measured quantities. Accordingly, this difference should equal the difference of measured radiation. Then

$$H_0 - E_1 - (H_1 - E_1) = L \left( \frac{1}{\sqrt{1 - \frac{v^2}{c^2}}} - 1 \right)$$
$$= \frac{1}{2} \frac{L v^2}{c^2} \cdot$$

Now the difference of H and E is one of measured values, and is dependent upon the physical states of the coördinate systems. This is the fact that the body is moving with respect to one system. The difference of coördinates is defined in physical terms. It follows that H - E equals the physical difference of the two systems. In other words, the physical difference of the two systems before and after radiation equals the difference of measured radiation. In formula, where  $K_0$  and  $K_1$  symbolize kinetic energy it follows that

$$H_{0} - E_{0} = K_{0},$$

$$H_{1} - E_{1} = K_{1},$$

$$K_{0} - K_{1} = L \left( \frac{1}{\sqrt{1 - \frac{v^{2}}{c^{2}}}} - 1 \right)$$

$$= \frac{1}{2} \frac{Lv^{2}}{c^{2}}.$$

The result of this equation is that if a body radiates energy of the amount L, its mass decreases to the amount  $L/c^2$ . The relation invariant for the measurements with respect to any system to which the process is referred. Thus the physical relation of inertial of space-time measurements.

What, from one point of view, is of particular interest is that it involves translating space and time differences into physical differences. It thus indicates the status of the geometrical continuum. The prior facts are the physical processes. They are prior to their coördinate descriptions, that is, to the geometrical laws of the coördinates. Thus the relation between physical properties is not in principle derivable from formulæ which refer simply to space and time measurements.

This conclusion follows from two important considerations for a physical theory. The one is the intrinsic nature of a geometrical system, the other the physical definition of such physical processes as motion and its inertial effects. Space or space-time as the geometrical continuum is fundamentally the order of physical objects. Its laws are the formal properties of these relations. In other words, the properties of the continuum do not reveal an intrinsic spatial character of empirical objects. It is only one order, among others which, conjoined with the fact of measurement, appear as physical laws, as, in the case of moving masses, the properties of coördinates are the laws of the behavior of bodies.

Accordingly, it is physically meaningless to define motion with respect to space or the continuum. The dynamical effects should be defined physically, not geometrically. Thus physical properties and processes are prior to their coördinate descriptions, so that there can be no physical meaning to this geometry apart from physical properties. Thus it is clear that the conditions of the relation between mass and energy rests upon Newtonian rather than Cartesian physics.

This result is, therefore, directly opposed to the mathematical interpretation of the theories of relativity. It also makes it different cult to accept the physical principles of Whitehead, which are those of Descartes rather than those of Galileo and Newton. erties of coördinates are the primary factor. The dynamical effect of motion, for instance, has physical meaning only as a function of geometrical coördinates. And from this consideration it logically follows that the relativity of space and time measurements can not be reduced to relativity of space and time measurements. be reduced to physical terms, that is, they will not be defined by the physical states. The laws of geometry will be independent of the behavior of any physical states. This condition clearly appears regarding moscours fundagarding measurement. If the laws of measurement are fundamental the theory of the laws of measurement are fundamental the theory of the laws of measurement are fundamental the theory of the laws of measurement are fundamental the theory of the laws of measurement are fundamental the theory of the laws of measurement are fundamental the laws of measurement are fund medital the theory of Whitehead is the logical conclusion from this principle. There will be those deprinciple. There will be no physical properties except those the finable as directly masses are the properties of the physical properties. finable as directly measured or directly measurable properties. The laws of geometry should be no physical properties except those the laws of geometry should be no physical properties. laws of geometry should then be independent of actual physical conditions. There will be ditions. There will be no physical meaning to processes without prior genera

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prior definition of the properties of coördinates. The special and general theories are, however, contrary in principle to this conclusion. In this respect the question of the relation of mass and energy bears an interesting relation to the fundamental principles of a philosophy of nature.

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#### BOOK REVIEWS

The Central Problem of David Hume's Philosophy. An Essay towards a Phenomenological Interpretation of the First Book of the Treatise of Human Nature. C. V. Salmon. (Offprint of Jahrbuch für Philosophie und phänomenologische Forschung, Vol. X; edited by E. Husserl.) Halle (Saale): 1929. Max Niemeyer. Pp. vii + 151.

At a time when the market is being flooded with bad books upon good subjects, it is a pleasure to welcome a good book even on what can hardly escape criticism as a rather unfruitful theme. It seems unlikely that many of Mr. Christopher Salmon's readers will care to endorse his representation of Hume as the forerunner neither of Kantian idealism nor of modern empirical psychology, but rather of the phenomenology of Brentano and Husserl. Yet, however questionable his premise, it is impossible to deny the subtlety and persuasiveness of the reasoning he bases on it, or the consequent plausibility of the conclusions he derives. It would, moreover, be unjust to his critical discernment to represent him as tracing a detailed parallelism between the position of the eighteenth-century philosopher and this modern school. The relationship he discovers is confined to a few significant aspects of their doctrine and method.

Hume's central interest, Mr. Salmon holds, in opposition to those who treat causality as his major problem, was "the investigation of the principles of human consciousness"; hence he turned his attention from what was objective to him in everyday life to what was actually passing in his own mind, i.e., to the "phenomenon" or "immanent object." It is true that the full significance of his 'idea" can not be appreciated until the intentional character of consciousness, as defined by Brentano, is understood. Nevertheless, his discovery that the perception of realities and the perception of ideas are not, as Locke held, complementary to each other but strictly alternative—the one the attitude of practical life, the other freed the philosopher engaged in "metaphysical reflection"—tive theory, and revealed it as the true field of philosophical investigation. That he made the two not merely alternative but contra-

dictory is indeed misleading, but it is an error that is easily corrected. We can disregard the objects of consciousness and concentrate attention on the objects in consciousness without impugning the reality of what is perceived; i.e., we can assume the Cartesian attitude, which was not sceptical but simply demanded an  $\epsilon_{\pi o \chi \dot{\eta}}$ , or bracketing of the transcendent object, an exclusion of the external world from the sphere of reference in order that the nature of consciousness and its contents might be understood.

An examination of Hume's subjective analysis in Part IV of the First Book of the Treatise reveals him, Mr. Salmon thinks, as feel, ing his way towards the phenomenological position: now in a flash of genius presupposing some of its most valuable discoveries, now drawn away from its pure subjectivism by his empirical prejudices. which always lead him to real hypostasis. Thus it is because he hypostasizes the contents of consciousness that he regards perceptions and objects as rival claimants to reality, and ends with the sceptical rejection of everything not contained in perception, hence of matter, space, and time. The same hypostasis causes him to oscillate between the "introspective mode," which Mr. Salmon as a phenomenologist defends as the method through which it is possible "to declare . . . the ultimate truths of all philosophy," and the objective mode of the empirical psychologist, whose material is not "experience experienced," but persons objectively observed, i.e., a part of the world of which he is conscious. Accordingly, Hume accounts for association, the principle by which all the relations of ideas constituting knowledge are reached, in causal terms, whilst nevertheless explaining our consciousness of causality in terms of the association of ideas. Moreover, it is possible to trace an exact parallel between his treatment of causality and of the ideas of quantitative relation. These are admittedly objective, thus affording and the state of causality an fording certain knowledge and imposing a limitation upon the subjective realm, yet are subordinated to the knowledge of qualitative relations, which is probable only, quantity or number being described as an arrangement of the knowledge of quantity of number being described as a second of the knowledge of quantity of number being described as a second of the knowledge of quantity of number being described as a second of the knowledge of quantity o scribed as one of the "associating qualities" whereby ideas are related and the resulting complexity of knowledge explained.

The most interesting chapter in the first part of the book, which deals with Hume's general position, is the chapter which examines his antithesis of "impression" and "idea." Here Mr. Salmon tries to show that the distinction made in the opening chapters of the Trecise is very quickly abandoned and the two treated for a while as complementary factors in the experience of objects, the impression being the contribution of sensation, i.e., the experience element, the idea the contribution of imagination, or object element, which is a fiction or construction out of sensuous material.

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mits, however, that Hume does not adhere consistently to this usage, that in some passages even the idea represents the experience element and the impression of the object element, in others the two are at mid-way, whilst in the end—and this is taken as a confession of failure—he reverts to his original antithesis. Thus one can not help wondering whether the occasional passages in which they seem to be related in this way are not being unduly emphasised, because they can be made to foreshadow the phenomenologist's distinction of "noesis" and "noema," or perception of object and object as perceived (object-in-consciousness). Mr. Salmon finds support for this interpretation of Hume's intention, however, in his opposition of the introspective to the natural attitude, which, had it been less extreme, would have led him to a merely provisional (Cartesian) doubt, or turning from outer to inner objects, rather than to radical scepticism.

Hume's treatment of belief as not "a belief in content," but a subjective manner of experience, is also endorsed as reconcilable with the phenomenologist's analysis of experience as a sequence of "protentions" (Intentionen) and satisfactions (Erfüllungen), belief being an attitude engendered by, and sustained through, the continuous fulfilment of expectation, though Hume is criticized for admitting the validity only of belief in the ideas of reason, and supposing that evidence in the sphere of perception could be invalidated by evidence from another sphere. Again, when he speaks of the "disposition" of belief to transport the mind from a present impression to related ideas, it would have been relevant to his particular problem, Mr. Salmon argues, to apply this not only to probable reasoning, but to perception, exhibiting it as a passage from an original impression along a chain of related ideas to a concrete object, which is a construction of imagination, or phenomenon, the impression being "the true and real cause both of the idea and of the belief which attends it."

The real difficulty of the task Mr. Salmon has set himself becomes most evident in the second part of the book, which examines Hume's treatment of his "central problem," that of external perception. As, moreover, it may be doubted whether a very important contribution is made to Hume criticism by an evaluation of him as a precursor of twentieth-century German philosophy, the chief interest of this very ingenious piece of analysis inevitably lies in the light that it sheds for the English reader on some of the docrines of Husserl and his school. Mr. Salmon's occasional digressions into contemporary theory, both here and in the earlier part, e.g., his actor III, are thus particularly valuable.

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From the point of view of its significance for later thought Hume's derivation of our belief in persisting objects from imagination is considered specially important, since in these imaginative ficta he laid bare the phenomena or objects-in-consciousness. It is difficult, however, to see that there is a very clear parallel between a scepticism which substitutes such phenomena for objects, making experience consist entirely of fictions to which distinct existence is erroneously ascribed, and a theory whose subjective constructions are the media of a knowledge of reality, their essential characteristic being their reference to a transcendent object. Nor is this made more plausible by representing Hume, even where he is explicitly defending the vulgar against the philosopher, as referring to the contents of consciousness as objects of introspection.

If, however, we allow this interpretation, and consent to regard Hume's "imagination" as "a name for the whole 'activity' of the pure consciousness, whose processes 'within' the ego construct the ego's perception or apprehension of all kinds of objectivity," his analysis of the principle of identity, on which the belief in continued existence is based, becomes extremely interesting. For it is easy then to argue, as Mr. Salmon does, that the identity which he is really referring to, and which he now apprehends, now obscures, and again assumes in a question-begging manner, is neither that of the external object he has denied nor of the psychical or psychophysical acts, which are obviously numerically distinct, but of an ideal object clearly distinguishable from both, a noema which remains constant through many noeses. This is the only identity that our perceptions themselves reveal, and it is these that he subjects to analysis. Hume's failure is attributed to his inability to distinguish clearly the three factors in perception: the experience as a factual reality, the real object, and the object as perceived, the last of which is not a spatio-temporal existent at all, and is only treated as such by an unwarrantable hypostasis. Ordinarily he denies the second and substitutes the third when passing from the natural to the philosophic attitude, but he confuses this with the first, hence his problem how to reconcile the apparent identity of the object with the plurality of psycho-physical events. Had he recognized the character of the phenomenon that he had himself revealed he would be recognized the recognized the character of the phenomenon that he had himself revealed he would be recognized the recognized the character of the phenomenon that he had himself revealed, he would have had no difficulty in admitting its "continuous existence" and its windte uous existence'' at different moments of consciousness. examination to which Mr. Salmon subjects this portion of the Treatise reveals, however reveals, however, such a shifting use of the terms "perception," impression ""; "idea"; "impression," "idea," and "object" that it is very difficult to be clear as to its doctri clear as to its doctrine even after this primary source of confusion that the has been allowed for, though one can not help feeling that the

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author complicates his problem even farther by reading into Hume's usage of these terms distinctions that an eighteenth-century philosopher could hardly have made, and thus being forced to confess that in other closely related passages these distinctions are merged. For example, in the discussion of real and false identity Hume is exhibited as having rejected the traditional theory of representative perception only to reintroduce it for a while in the subjective sphere, making images and ideas represent "perception-objects," whereas to the naïve reader he seems merely to be confusing the percept with the perceiving act and, more generally, to be vacillating between the traditional theory and his own sceptical position.

As the first essay in Phenomenology that has appeared in English Mr. Salmon's book has a special interest. It is hoped that it may be followed by others, both from himself and from other English and American writers who have studied this phase of contemporary German thought.

MARY E. CLARKE.

SMITH COLLEGE.

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Esthetic Judgment. DAVID W. PRALL. New York: Thomas Y. Crowell & Company. 1930. xv + 378 pp.

There are doubtless readers who will disagree with some of Professor Prall's theoretical conclusions—or presumptions—especially with his use of the term "esthetic judgment" and his emphatic isolation or at least demarcation of esthetic value as final value. But there will be none, one suspects, who will fail to be impressed by a book whose theory is strikingly the expression of its subject-matter, and not an exploitation or distortion of it. Professor Prall's book is written out of a specific and informed concern with the fine arts, and a clarification of those esthetic experiences which, though he has found words for them, are with him indubitably more than words. In a gratifying sense, Professor Prall knows what he is talking about and he talks clearly about it. This is the first of many things for which one is grateful to him. For in the realm of esthetics, mangled metaphysics, mystical epistemology, and Epicurean ethics have too often passed for reflection upon art and the esthetic experience.

To understand Professor Prall's analysis, it were best to begin where he begins: with "the pleasant experience of contemplating the surface of our world simply for itself as the object before us." The esthetic judgment, "this or that is beautiful, is simply the record of that pleasant experience." One might quarrel, as this reviewer is tempted to quarrel, with such a use of the term "judgment." But one is not so much tempted to quarrel with as to applaud the point made and the points implied by thus beginning with

the "pleasant experience of the surface of our world thus revealed to us by our senses." The phrasing seems to suggest a dualism between the self and the world, of mind and nature, that not everyone, certainly not the reviewer, will be prepared to subscribe to. But this is a book that aims to deal directly with esthetic phenomena and the esthetic experience. And it seems that there could scarcely be a better way to begin than with "esthetic surface," which term itself is a helpful instrument and contribution, and with that sensuous impingement upon which all formal values are dependent and by which alone expressiveness is mediated.

Professor Prall seems to me at his best in making precise and clear what esthetic surface is, what sensuous discrimination is and involves. He here follows, unless I misread him completely, the general lead of Santayana in The Sense of Beauty, as he does in his conception of expressiveness. This is not to say that he does not make contributions of his own. To the present writer it appears inconceivable that any writer who has had both experience in the fine arts and had read Santayana could fail to be guided by the luminous and relevant suggestions of his wise book. But Professor Prall's "esthetic surface" is far more sharply specified than Santayana's "materials of beauty," and he contributes a highly illuminating chapter of illustration from primitive art and life of those sensuous elements which are "the primary subject-matter of esthetic theory." And so far as I can make out, when Professor Prall speaks of the esthetic judgment as the record of an esthetic experience, he is simply calling attention to a fact simple, important, and too often forgotten, that no discrimination is possible among esthetic objects unless there is a sensuous awakening and bodily resonance to begin with. "Judgments," writes Profesor Prall, "record beauties directly felt." Certainly judgments made upon beauties not experienced are not so much invalid as impossible or pretended or pretentious.

Professor Prall makes a further specific contribution of his own in his excellent chapters on the materials of color, sound, space, and material as temporal structure. Very deftly and convincingly, and with illuminating detail, he indicates how much our experience of music and of painting is dependent on "intrinsic" orders in sounds and colors themselves, upon which all further forms and orders and meanings depend

Professor Prall insists for a hundred detailed pages on the importance of esthetic surface. It is for him indeed true that the "creative products of technique become fine arts as their aesthetic surface becomes satisfying to contemplation." He is inclined to minimize form as a separate category, and to regard

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it rather as a determination or specification of esthetic surface. "Esthetic surfaces may offer naturally composed sensuous structures. .... These must depend primarily upon principles of structure intrinsically present in the sensuous elements as such." But he recognizes in several persuasive chapters the sense in which "expressiveness" is itself an element of beauty. He makes quite elear the easy fallacy of treating works of art as merely linguistic symbols: "it is only as works of art give specification—not linguistic symbols: "or any other sort of symbols merely—but actual present determination for direct sense perception—to human feelings, emotions, desires, and satisfactions embodied in the sensuous surface and felt upon it as being its character and quality—only so do they share in the nature of actual concrete works of art."

Space does not permit a detailed consideration of the many points at which Professor Prall makes distinctions that help, as any meaningful esthetic theory should, the experience in the interests of whose clarification are their one genuine justification. One can only mention his excellent treatment of the combined arts, especially notable being his indication of the sense in which works of combined art have "a beauty and character more or less removed from the effective beauties of these less mixed arts."

In Professor Prall's chapter on Criticism, the most central almost in any theory of esthetics, he does not say anything distinctly new, but what is almost as desirable, everything he says is to the point. It can not bear too much repeating that criticism begins in direct appreciation, that it is the suggested or explicit evaluation according to implied or avowed standards, that among the forgotten elements of such standards technical considerations play no small part. His account of the function of the critic as an analyst and as a communicator of beauties he has experienced might well be put in the hands of any practicing critic or any philosopher of criticism.

In the case of Professor Prall himself there is a philosophy of criticism involved, and one which comes out most clearly in his discussion of "Art in Life and in Society." "There is a clear sense," he begins, "in which esthetic value is final and ultimate, since the possession of it is the possession of what is good in itself. . . . Means are only valuable with the actual value attributed to their real ends; and this attribution if it is valid, always involves the situation in which the end-value is directly and immediately experienced. But all such direct and immediate experience is clearly enough of a sensuous or imaginative surface of some sort which is information of the complex esthetic structure, directly appreciated in contemplation."

There is one sense in which one is not likely to question Pro. fessor Prall's doctrine that esthetic values are final, or that they are immediate, or that they are the only values. Any beutiful thing is beautiful, any lovely surface is lovely, any good is a good. But an examination of actual esthetic experience, it is suggested would indicate that no distinction between means and ends can be drawn as sharply as Professor Prall draws it; the very amount of consideration he gives to the technical resources of an art, and the technical achievement to be noted in criticism, would seem to make technique or instrumental considerations important in the arts themselves. And Professor Prall's own explicit attention to the presence of beauty in instruments and in the relations of daily living would tend to deny the kind of separation of ends and means that he seems theoretically to subscribe to. Esthetic values themselves, as in the case of those which enrich, clarify, or illuminate further and other than esthetic experiences, would show these "values" to be themselves a kind of means, a means to further enjoyments and understandings. One feels that the dialectic of a certain theory of value about which Professor Prall has written elsewhere, sometimes interferes with his sensitive, direct, and highly illuminating study of the esthetic experience.

One other point of purely literary criticism. A book of esthetics should itself have an "esthetic surface." Mr. Prall writes in portions of this book with an apposite beauty. But there is one sentence twenty-one lines long and one with a hundred and seventyfour words in it. There are sentences with an elaborate and confusing technology of phrase that one suspects Professor Prall uses as an obeisance to the profession of philosophy rather than because it elucidates his position or beautifies his book. Despite these minor defects, the latter is what it sets out to be, a luminous theory of a genuine subject-matter, the arts and their place in life, beauty and the love of it.

IRWIN EDMAN.

COLUMBIA UNIVERSITY.

Essai philosophique sur la théorie de la relativité. Paris: Félix Alcan. 1929. Pp. 201. Appended notes.

The subject of this essay is the controversies over the proper verbal interpretation of the relativity theory. It is clear that the physicists need not be concerned with verbal renditions of the theory other than that are in the concerned with verbal renditions of the they are other than that minimum of discourse required to tell how they are using their technical technical and the state of the st using their technical terms. But the separation of their language from ordinary disc. from ordinary discourse has given rise to sundry literature aiming to restore continuit. to restore continuity to the movement of intellectual discussion. Dupont calls this an epistemological problem.

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He illuminates the situation by an analogy of physical theory to The strictly mathematical equations are to their physical interpretations as the purely musical score is to the libretto story. Numerical calculations and coefficients of measurement correspond to the action of the plot. A one-many relation subsists between the mathematical system and its applications as well as between the musical composition and its 'program'' stories or "affabulations." Whether the latter are appropriately comic or tragic depends on the same esthetic relations as determine the selection of any set of postulates as most convenient or simple. We might add that the success of the right dramatic story is as important as finding a categorical interpretation of a set of postulates for the purpose of testing its consistency.

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This distinction between the technical formula and its comprehensibility in customary speech surely arises as an educational problem. From the logical standpoint also, it is well to remember that convenience and fecundity as criteria of theories apply only to the latter discursive part of theories, that is, the making clear to others what the technical formula and its implications mean. It is less important from the epistemological standpoint that a set of postulates has a minimum number of assumptions than that the verbal meanings or explanations of these fit our common knowledge or common prejudices. Accord with these formal intentions of the mind, nos partis pris formels, makes a theory like relativity comprehensible. Controversies about relativity in physics belong to this Process of discursive adjustment and not to the technical use of the equations.

"When physicists declare that all their experiments verify a terrain system of equations, one can not contradict them except by beginning all over again all their experiments" (p. 20).

When paradoxes arise in explaining the new meanings of terms whose old meanings have been partially abandoned, partially explanded, any of three elements are involved: the equations, their verbal meanings, our formal prejudices. These may require alteration by experiment, better style, or a fresh sensibility to new abstractions.

The difference between the classical conformist and Einsteinian relativistic ways of explaining verbally the equations of motion contents technically the procedure of regulating clocks, and more genterns as equal distances, equal times, simultaneity, contraction of lengths, slowing up of clocks, mass, gravitation, etc.

The author argues that the verbal explanations given by Einstein indisputable equations of restricted and general relativity

are not as satisfactory as the conformist theory of accounting for the Lorentz contraction by means of the Galilean meanings of space, time, and motion. Yet all his evidence consists of scattered experiments claiming to be competent substitutes for the Einsteinian method of explaining the equations of transformation by light signals.

The appended notes contain lucid accounts of the technical information required to follow the author's argument. For example, the positive meaning of physical equations is reduced succinctly to the following: "Such and such operations (generally very complex) called "measurements" being made in such and such ways on such and such complexes of given materials, the numbers found have among them such and such numerical relations." In the equations, the complexes of given materials are symbolized by variables, and the measurements by the numerical coefficients. The choice of units of measurement is pragmatic. A typographical error occurs in the appended note B to chapter V (p. 195, line 17) that might prevent the reader from following the simple algebraic derivation of the Lorentz contraction: there should be a minus sign between the squares of c and v.

While it is true that physicists are partly responsible for taking their technical results literally as transcripts of given realities, M. Dupont's essay warns us to be also critical of philosophers who claim proof for their doctrines from the latest theory accepted as a technical working account of that aspect of our experience known as the physical world.

PHILIP PAUL WIENER.

University of Southern California.

### JOURNALS AND NEW BOOKS

HARVARD THEOLOGICAL REVIEW. Vol. XXIII, No. 3. The Relation of Primitive Christianity to Jewish Thought and Teaching: W. R. Arnold. Some Aspects of Our Puritan Inheritance: E. C. Moore. Professor Dewey Discusses Religion: J. S. Bixler. The Authoress of Revelation—A Conjecture: B. W. Bacon.

Adam, Herbert: Carl Leonhard Reinholds philosophischer temwechsel. (Beiträge zur Philosophie, 19.) Heidelberg: Wieters Universitätsband in Philosophie, 19.) Heidelberg:

Wieters Universitätsbuchhandlung. 1930. 136 pp. 6.50 M.
Archives de Philosophie, Vol. VII, Cahier III. Supplément
Bibliographique, No. 3. Philosophie et Science: L. Pouquet, H.
Gauthier, J. Klein. Paris: Gabriel Beauchesne. 1930. 166 pp.
48 pp.

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Ellis, Willis Davis: Gestalt Psychology. Berkeley: Sather Gate Book Shop. 1930. xi + 172 pp.

Litman, Alexander. Cicero's Doctrine of Nature and Man. (Ph.D. dissertation, Columbia University, 1930.) 41 pages.

Luzzatti, Luigi: God in Freedom. Studies in the Relations between Church and State. Translated from the Italian by Alfonso Arbib-Costa. With American Supplementary Chapters by Wm. H. Taft, Irving Lehman, Louis Marshall, Max J. Kohler, Dora Askowith. Issued in Commemoration of the One Hundred and Fiftieth Anniversary of the Constitutional Establishment of Religious Liberty. New York: Macmillan Co. 1930. xxxix-+794 pp. \$5.00.

Montague, Wm. Pepperell: Belief Unbound. A Promethean Religion for the Modern World. (The Terry Lectures.) Yale University Press. 1930. 98 pp. \$1.50.

Scheele, Meta: Wissen und Glaube in der Geschichtswissenschaft. Studien zum historischen Pyrrhonismus in Frankreich und Deutschland. (Beiträge zur Philosophie, 18). Heidelberg: Carl Winters Universitätsbuchhandlung. 1930. xiii-+ 150 pp. 10 M.

Tufts, James H.: Recent Ethics in its Broader Relations. (University of California Publications in Philosophy, Volume 12, No. 2, pp. 181–201.) Berkeley: University of California Press. 1930.

The following three volumes have appeared, published by the Facsimile Text Society:

John Donne: Biathanatos. Reproduced from the First Edition. With a Bibliographical Note by J. William Hebel. (Series I: Literature and Language. Vol. 1) vii + 218 pp.

Henry More: Enchiridion Ethicum. The English Translation of 1690. Reproduced from the First Edition. (Series III: Philosophy. Vol. 1) 268 pp.

Ralph Cudworth: A Sermon Preached before the House of Commons March 31, 1647. Reproduced from the Original Edition. (Series III: Philosophy. Vol. 2.) 83 pp.

The aim of the Facsimile Text Society is to reproduce rare printed texts, pamphlets, and manuscripts that are of interest to scholars. The method of reproduction is the offset process which is based upon photographs of the original documents. Membership in the society costs five dollars a year; and each member is privileged to receive free five dollars' worth of the books brought out by the society and may purchase additional books at 33 1/3 per cent. disson, Columbia University, New York City.

#### NOTES AND NEWS

We regret to announce the sudden death from cerebral hemor. rhage on September 22 at Hardwick, Vermont, of Professor Theodore de Laguna, of Bryn Mawr College.

We print the following preliminary announcement of the Thirtieth Annual Meeting of the Eastern Division of the American Philosophical Association:

The meeting for 1930 of the American Philosophical Association. Eastern Division, will be held at the University of Virginia, Charlottesville, Virginia, from Sunday evening to Tuesday afternoon, December 28th to 30th.

Members will recall that this meeting was determined upon by vote of the Division at its last session in New York. It is not to be confused with the general meeting to be held at about the same time in Berkeley, California, for the reception of the Carus Lectures.

A varied program of papers and symposia is being prepared. Members who have papers, either in their desks or in their minds, which they would like to have discussed at the meeting are urged to send them to the Secretary, not later than November 20th, for reading by the Program Committee. In lieu of the papers themselves, abstracts of two to three hundred words will suffice. The Committee asks, as in the past, that papers should not exceed twenty minutes in length.

A detailed program of the meeting will be sent to all members of the Division as early in December as practicable.

> BRAND BLANSHARD, Secretary.

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SWARTHMORE COLLEGE, SWARTHMORE, PA.

To the Editors of the Journal of Philosophy:

In a letter published in this Journal on August 14, Dr. Andrew Uchenka to I have the P. Uchenko took exception to my recent review of his book, The Logic of Events, on the ground that the criticism was "entirely impressionistic." impressionistic and unanalytic." Of course, it is possible that I have misundersteed him the ground that the criticism was have misunderstood his work; but he is mistaken in supposing that my impression my impression was formed without due consideration and analysis. I had read and are without due consideration and analysis. I had read and annotated his book with the greatest care, and if the resultant impression and annotated his book with the greatest care, and lie at resultant impression was entirely erroneous, the fault must lie at least partly with the last least partly with the book which conveyed it. Therefore I should like to answer his charments about like to answer his charges one by one.

First, as to the ambition which he disclaims—"to reconcile the

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thenomenology of the spirit with the principles of mathematics": the logic which he calls atomic is, so far as I can see, the logic of Russell, Whitehead, Wittgenstein, and other mathematical logicians. this logic is the principles of mathematics. The "contextual" logic, Therein "to find the ultimate meaning of any entity whatsoever one is driven to proceed to more and more comprehensive contexts until the all-embracing field of thought is reached" (p. 50), is the logic of Hegel, which entails a phenomenology of the spirit, especially if one agrees that the form of thought is that of reality. Dr. Uchenko criticizes the limitations of both types of logic, and presents his own view, of which he says: "This conclusion, I think, signifies the synthesis of the atomic and the contextual logic." At the end of the chapter (p. 71) he says, "This chapter has presented an attempt to give a synthesis of the Atomic and the Contextual Logic." One would have to be either a mind-reader or an expert in deception not to suppose that that is what he is trying to do.

Dr. Uchenko objects to being called a Hegelian; I have not called him one. I called his system a modified Hegelianism. Anyone, I think, who reads pages 103–104, or page 177, where he says: "Thus it is possible that at the highest extreme of the universe there is an all-comprehensive moment, which fulfills by itself the list of all actual achievements. Such a moment would be a maximum of empirical completeness and relatively to other temporal series could be called the final totality or eternity," would agree with me that the structure of this system is that of Hegel's dialectically progressing universe crowned with an Absolute—in this case, a dialectic of time-structures with a Supreme Moment. The modifications to which I referred are to be found in just those criticisms which the author mentioned.

So much for the phenomenology of the spirit; as to the principles of mathematics, I do not see how one can undertake a work on logic with special reference to time, without being conversant with those principles. Dr. Uchenko defends himself with a plea of ignorance at the time of writing his thesis. Whatever may be the requirements for a Ph.D. thesis, this book which constantly quotes Principia Mathematica and devotes a chapter to "the atomic logic" requires knowledge of that subject. I think his retreat at this point tends to bear out my contention that he often uses the language of mathematical logic in rather astounding ways (as his use of mathematical logic in rather astounding ways (as his use of mathematica and adduces the theory of types, which concerns functions and their arguments, to illustrate the dependence of the meaning of a proposition on the meanings of its terms, which concerns a

logical structure and its specific parts, and falls under the heading of incomplete symbols, not of types). I mention this merely because he charged me with "being content with an unsupported general statement." Certainly what he calls "time" is what mathematicians call "serial order" of one sort or another, and what he means by "events of logic" is what Russell and Whitehead call "asserted propositions." I do not believe that propositions with the assertion-sign are "events" in Whitehead's sense.

This conception of "events" or "occurrences" makes me believe that the "revelation" he treats of in the passage which I quoted (according to him, out of context) is just as bad logically within its full context as without. Had he said in the book what he added as a gloss in his letter, a different reading might have been at least allowable; but he did not say it in the book. Furthermore, the confusion of abstraction with generalization, which he tries to shelve by pointing out that he was not talking about either topic, can none the less be shown, for it is made in use, not in theory. On page 61 he is talking about concrete instances, to which he should oppose abstract concepts, but what he does oppose to them is a general property: "A color, red, say, is opposed to any particular patch of red because it is common to all these patches." Such generalization does not give us an abstract entity. And if he did not mean to arrive at abstractions, then why refer by way of contrast to the "accidental and concrete"? And what have non-abstract events, qualities, or "times" to do with logic?

I hope readers of my review, and especially Dr. Uchenko, will now realize that, whatever its short-comings may be, it was not based upon a superficial impression.

SUSANNE K. LANGER.

RADCLIFFE COLLEGE.

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# THE JOURNAL OF PHILOSOPHY

There is no similar journal in the field of scientific philosophy. It is issued fortnightly and permits the quick publication of short contributions, prompt reviews, and timely discussions. The contents of the last six issues are as follows:

### Volume XXVII. No. 15. July 17, 1930.

Mr. Hook's Impression of Phenomenology. Dorion Cairns.
The Progress of German Philosophy in the Last Hundred Years.
Horace L. Friess.

Rook Reviews. Journals and New Books. Notes and News.

#### Volume XXVII. No. 16. July 31, 1930.

Review of Current Social Psychology. Gardner Murphy.

Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 17. August 14, 1930.

Human Nature and Social Economy. I. Rexford G. Tugwell.

Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 18. August 28, 1930.

Human Nature and Social Economy. II. Rexford G. Tugwell.

Limitations. A. A. Merrill.

Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 19. September 11, 1930.

The Method of Deduction and its Limitations. Marvin Farber.
The Definition of Yellow and of Good. Donald Cary Williams.

Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 20. September 25, 1930.

An Analysis of the Experience of Time. V. J. McGill.

Book Reviews. Journals and New Books. Notes and News.

### THE JOURNAL OF PHILOSOPHY

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### CONSTRUCTION AND CRITICISM

By John Dewey

This is the first Davies memorial lecture, delivered February twenty-fifth, 1930, for the Institute of Arts and Sciences. Dewey maintains that we can accomplish constructive thinking only after we have found ourselves. We must be critical and, above all, criticize ourselves in order to give full reign to our creative activity and any original characteristics in us.

\$0.75 paper.

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Dr. Reed analyzes Gompers' doctrine of tradeunionism and the history of its evolution from his early attachment to his subsequent hatred of Socialism. He then minutely describes and discusses Gompers' ideas about the political policy of the Federation; his attitude toward the State and individualism; his attitude toward industrialism and organization of the unorganized; and his policies in international relations and trade unionism. \$3.00

### THE BOOK OF DIOGENES LAERTIUS

By RICHARD HOPE

This book, the main ancient secondary source of our knowledge of the classic Greek philosophers, will interest scholars in the sources of our conceptions of ancient philosophy and in the forces that have determined the lines along which the traditional histories of philosophy have been written. The treatise traces the career of the book and makes a thorough analysis of fundamental strains of thought in the work.

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## JOURNAL OF PHILOSOPHY

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### THE JOURNAL OF PHILOSOPHY

### THE DIALECTICAL ARGUMENT AGAINST ABSOLUTE SIMULTANEITY. I

IT has been generally recognized that Einstein's most original and his most far-reaching innovation was the proposal to extend the conception of relativity from space to time. Science as well seemmon sense had—even when it admitted that "time" is simply name for a special mode of relatedness—always assumed that there sa single universal order of temporal relations, to a place in which every event can be unequivocally assigned; it had therefore conrelived that there is such a thing as absolute simultaneity, that a imporal cross-section of the whole of empirical reality could be taken, in such wise that every actual event would be either definitely and unqualifiedly contained in, or definitely and unqualifiedly exduded from, that cross-section, not by virtue of any convention or abitrary definition, but by the objective inter-relations of things; and it had likewise assumed that the sum of events constituted a ingle absolute linear sequence which is the history of the world. It sin not only challenging these assumptions, but also offering a proof of their inadmissibility, that Einstein appears as the arch-revoluhonary in the history of the philosophy of nature. I can conceive tino task more obviously incumbent upon philosophers of our time han that of endeavoring to determine, through the most searching lossible logical scrutiny of the proposed proof, whether this revoluin is successful, or how far it reaches. For the transformation of fundamental conceptions which it at least appears to demand, which it is commonly construed by physicists as demanding, is only radical, but singularly widely ramifying. It seems to ennot merely a new physics, but a new logic, which would affect our holde of reasoning on many problems besides those with which Eintein himself is primarily concerned; it seems also, as has already been suggested, to imply the meaninglessness of the whole notion of a the basical history which all the philosophical discussions during the basical history which all the philosophical discussions during the basical history which all the philosophical discussions during the basical history which all the philosophical discussions during the basical history which all the philosophical discussions during the basical history which all the philosophical discussions during the basical history which all the philosophical discussions during the basical history which all the philosophical discussions during the basical history which all the philosophical discussions during the basical history which all the philosophical discussions during the basical history which all the philosophical discussions during the basical history which all the philosophical discussions during the basical history which all the philosophical discussions during the basical history which all the philosophical discussions during the basical history which all the philosophical discussions during the basical history which all the basical history which has been all the basical history which has the past three centuries concerning the sequence called "evoluand concerning the significance of the time-process, have pre-1 It had, indeed, been approximated by Lorentz in his conception of "local"; these of clock-readings and did

th had, indeed, been approximated by Lorentz in his conception is exclude to the manual disparities of clock-readings and did to the exclude to the manual disparities of clock-readings and did to the exclude to the manual disparities of clock-readings and did to the exclude to the manual disparities of clock-readings and did to the exclude to the exclusion to the e the exclude the assumption of a single "real" time which embraced them all. Mether Einstein's theory actually dispenses with this assumption we shall inhire at a later point.

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supposed.<sup>2</sup> Philosophers ought not, I venture to suggest, to take over from physicists and mathematicians a new fundamental logic and a new metaphysics without a more active exercise of the critical faculty than has thus far—with some notable exceptions—been ap-

parent.

The proposed proof of the relativity of time is of two sorts. On the one hand, the new conception is proffered as a way of escape, otherwise unattainable, from the predicament in which theoretical physics found itself in consequence of the unexpected results of the Michelson-Morley and other experiments. On the other hand there is offered an independent argument, supposed to be cogent in itself, to show not merely the unreality of absolute simultaneity, but the inconceivability or meaninglessness of the idea of it—an argument which, it is implied, critical reflection might well have reached at any time since the discovery of the finite velocity of light. It is exclusively with this latter argument that the present paper will be concerned.<sup>3</sup> Familiar though this piece of reasoning is, it seems advisable to recapitulate it here, in such a way as to make as explicit as possible whatever tacit assumptions it involves and its precise logical structure.

The argument may be resolved into four steps.

(a) The first is the enunciation of a general thesis belonging wholly to the province of logical theory or (in one acceptation of the term) epistemology. Einstein finds physics full of propositions about the simultaneity or non-simultaneity of events; he finds these concepts playing a decisive rôle in interpretations of the Michelson-Morley and other experiments; and his special originality as a physicist is that, at a crucial point in the history of his science, he suddenly begins to behave like a philosopher. He does not, that is, first go forward in quest of new experimental facts or even of new hypotheses about such facts; he does not, in the first instance, introduce a new phat. duce a new mathematical technique; instead, he engages in what, if performed by one conventionally classified as a philosopher, would, I suspect, be likely to be somewhat contemptuously called by many physicists "dialectic"; he turns, namely, to the analysis of fundamental concentrations of the same of mental concepts, raising the prior question: what do we or can we really mean when really mean when we predicate the attribute "simultaneity" of two or more events? And not content with this lapse into the odd regressive habit of the gressive habit of the philosopher, he pushes the inquiry yet another degree farther hash included asks, degree farther back into the region of abstract notions, and asks,

<sup>2</sup> That it does this is, for example, expressly affirmed by Bertrand Russell:

"The universal cosmic time which used to be taken for granted is thus in admissible" (A B C of Relativity 7, 50)

admissible', (A B C of Relativity, p. 50).

8 With certain other aspects of the doctrine of the relativity of time I have dealt in another paper which I hope to publish shortly elsewhere.

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tairly explicitly, what the last-mentioned question itself means. What, in other words, is the meaning of "meaning"? What conditions must be fulfilled in order that a term—whether "simulaneity" or any other—shall have any meaning at all, and under what generic sort of difference must all particular differences of meaning between concepts be subsumed? It is the question to which the pragmatism of Peirce and James, in its initial form, proposed a reply. Any answer to this question will, of course, be equivalent the formulation of the requirements for any significant and disfinet definition of a term. Upon Einstein's answer the whole sperstructure of the primary argument for the relativization of time will be found to be based. Thus the "restricted" hypothesis of relativity, in its most original feature, is not so much a physical theory from which philosophical conclusions may be drawn as it is aphilosophical theory from which—with the aid, of course, of other considerations—physical conclusions have been drawn.4 It is this fact that justifies my previous remark that the discussion of the Special Theory is primarily the business of the philosopher—at least if the logic of definition is admitted to be a part of his business. It is true that Einstein's temporary reversion from the problems

of experimental science to those of the mere anatomist of ideas is a case of reculer pour mieux sauter; for the answer he finds to his fundamental question in pure logic is a (not wholly consistent) expression of what I shall call the "radically experimental theory of the nature of meaning." By this name I designate the following duplex thesis: Any general attributive term—such as the adjective "simultaneous" and the abstract noun "simultaneity"—(i) has "meaning" only if its definition formulates some practicable method which the applicability of the term in question to a given subject of discourse can be experimentally determined, i.e., describes some event capable of being directly observed at first hand under exactly determinable conditions, which event shall serve as the criterion for applicability; 5 and (ii) the occurrence of such event, under the tonditions set forth in the definition, is the meaning, and the whole meaning, of the term. The first clause of this thesis obviously hight be, and by many would be, accepted, without the second. hay seem to common sense innocuous and reasonable to say that no

It is, as will appear in the sequel, somewhat to be regretted that Einstein loss, the still prior question: In what way can we go about getting an answer to make the question concerning the nature of "meaning." If a difference of opinion with regard to this question, or with regard to the number of separate to the number of separate to the possess, how is such a dispute to be settled?

The words "experimentally" and "experienced" are big with ambiging the exposition of the rest of the argument about absolute simultaneity.

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term "means anything" unless it implies some concrete possible experience whereby we may judge whether objects or events possess the attribute which it names; but it doubtless seems to most persons highly paradoxical to say that no term can ever signify anything more than what is actually given in the verifying experience or The experimental means of determining whether the experiment. character expressed by the term is present in a given situation is commonly conceived to be usually merely the sign or circumstantial evidence of something else—and it is this something else that is said to be the "meaning" of the term. If I meet a featherless biped who never talks, orally or otherwise, I can never judge whether or not he thinks, and it may no doubt plausibly—though, as I believe quite falsely—be said that talking is an essential part of the "meaning" of thinking; but the assertion of the behaviorist that thinking is nothing but talking does not (as yet) generally pass for a selfevident proposition. To take a physical instance, astronomers were long able to judge of the probable distances of remote stars whose parallax could not be measured, only by observing and measuring the "apparent brightness" of the stars. The degree of brightness, that is, was the sole experimental criterion (admittedly a poor one) of distance which they could apply; they did not even then, however, suppose themselves to mean by the star's distance its "apparent brightness." These remarks are not intended as criticisms of the radically experimental theory of meaning, but only as aids to the understanding of its import.6

It is not, indeed, entirely clear from Einstein's general statement of what a legitimate definition of "simultaneity"—or of anything else—must be, that his argument presupposes the second as well as the first clause of the experimental theory of meaning as above defined. A proposition asserting the simultaneity of two events—e.g., that lightning has struck two places, distant from one another, at the same time—has, he observes, no significance if there is no way "to determine by observations whether in the actual case the two events took place simultaneously or not."

The concept "simultaneous" does not exist for the physicist until he has the possibility of discovering whether or not it is fulfilled in an actual case. We thus require a definition of simultaneity such that this definition supplies us with the method by which (e.g.) we can decide whether or not both the lightning strokes occurred simultaneously. As long as this requirement is not satisfied, I allow myself to be deceived as a physicist (and of course the same applies when I am not a physicist), when I assume that I am able to attach a meaning to the statement of simultaneity.

What the "experimental" meaning of "distance," as applied to bodies outside our planet, can be for the contemporary astronomer, or whether the term so applied can possibly have such meaning, is a nice question which it will be expedient for the present to leave undiscussed.

7 Relativity, p. 24.

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to bodies the term t will be and to show the crucial place of this consideration in the argument, Finstein begs his reader "not to proceed farther until he is fully convinced on this point." This passage by itself might be construed as merely laying down one simple conditio sine qua non of meaningfulness, not as asserting that "the method by which we can decide whether or not" any predicate is "fulfilled in an actual case" is all that the predicate can signify. It is only after we have examined the subsequent steps of the argument, that we shall be able to see that the assumption about meaning which Einstein actually applies presupposes both clauses of the radically experimental theory and to note further implications of that theory as used by him. the second step of the argument, then, we now turn.

(b) That step, of course, consists in the framing of a definition of "simultaneity" which will meet the requirements of the experimental theory. In proceeding to this is Einstein really inventing a completely new meaning for this familiar word? The question of the nature of his logical procedure at this point we shall find to be curiously involved one. For the present purpose of a preliminary summary, however, it suffices to say that he appears to take over at least a part of the definition from ordinary usage. For him, as for everybody, "simultaneity" is the name of a relation between events, and specifically, of the relation of temporal togetherness. That some sense must be supposed, even at this stage of the argument, to attach to the adjective "temporal"—at least enough to enable us to distinguish in thought between temporal and spatial togetherness—is evident. But the definition is for Einstein incomplete until it specifies that directly observable or experimental criterion of temporal togetherness demanded by his doctrine of mean-And in fact he recognizes three different possible definitions corresponding to three classes of pairs of events about the simultaneity of which question may be raised—though only the third is important for his main argument. (i) There is, first, psychological Subjective simultaneity, the conjunction in a single specious Present, in the experience of one individual, of two or more sensedata or other items of content. Here, of course, the empirical criterion. terion is simply the directly experienced togetherness of the data. A truly radical empiricist with respect to time would declare this to be not merely a sufficient but the only possible "experimental" definition of simultaneity; for it designates the only way in which any temporal togetherness of things can ever become a fact of impediate and the control of simultaneity; for it designates the only temporal togetherness of things can ever become a fact of impediate and the control of simultaneity; for it designates the only temporal togetherness of things can ever become a fact of important togetherness of things can ever become a fact of important togetherness of things can ever become a fact of important togetherness of things can ever become a fact of important togetherness of things can ever become a fact of important togetherness of things can ever become a fact of important togetherness of things can ever become a fact of important togetherness of things can ever become a fact of important togetherness of things can ever become a fact of important togetherness of the control of diate experience. Einstein, however, like most physicists, is too the conservativization of time he the concept; to this really thorough-going relativization of time he manifestly averse—whether consistently or otherwise we shall not

now inquire. He clearly assumes, at least in this part of his reason. ing, that in perception we are dealing with physical objects or events which are not—at all events, are not initially to be assumed to be—the same facts as the sense-data through which we perceive them, and the temporal togetherness of which is therefore not necessarily identical with the temporal togetherness of the percepts corresponding to them. Psychological simultaneity is therefore not sufficient for his purpose; what is needed is a "physical" definition (ii) There is, however, one class of physical events in which psychological simultaneity may be regarded as the virtual equivalent of physical simultaneity—viz., those events which occur in the immediate vicinity of one another and of the body of the observer. Where there is very close proximity in space, the observer may treat the time at which an event is perceived as approximately the same as its time; and if he has set up clocks the readings of which are determined by some convention, he may "understand by the 'time' of the event the reading (position of the hands) of that one of the clocks which is in the immediate vicinity (in space) of the event." 8

(iii) This, however, aside from being only a definition of approximate or virtual physical simultaneity, does not apply to events which are distant in space from one another, and at least one of which, therefore, must be distant from the place occupied by the observersince he can not be in two places at once. Of such events observation is possible only by means of signals of some sort, transmitted through space from the locus of the event to the locus of the observer. This spatial separation of event and observer would, indeed, not render it inadmissible to identify the time (as subjectively apprehended) of the observation with the time of the event, if it were possible to transmit such signals with infinite velocity. But even the kind of signal which would best serve the purpose—being uniform and speedier than any other—namely, light, is known to move with a finite velocity.9 The physical definition of simultaneity must

8 Relativity, p. 28.

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<sup>&</sup>lt;sup>9</sup> Einstein himself (*Relativity*, pp. 27-28), it should be noted, insists that not here making all the physical he is not here making either "a supposition or a hypothesis about the physical nature of light," but nature of light," but merely a "stipulation in order to arrive at a definition of simultaneity." Other simultaneity." Other expositors of the theory explicitly recognize that an already experimentally cotally cota already experimentally-established factual proposition about the behavior of light-rays must here be interested factual proposition about the justify the light-rays must here be introduced into the argument in order to justify the new definition; e.g., Birkhoff new definition; e.g., Birkhoff writes: "Then came the last step in advance, made possible only by the reclination." possible only by the realization that light travels at a finite velocity, that absolute simultaneity is macris lute simultaneity is meaningless unless defined by a physical process (Origin . . . of Relativity) (Origin . . . of Relativity, p. 23). The above summary provisionally accepts this version of the argument. this version of the argument; the logical difficulties involved will be examined presently.

therefore take this fact into account: i.e., the temporal togetherness of the events must be assumed to be identifiable with the observed temporal togetherness of the arrival of the signals only when the patial relation of the events to the observer is by definition such s to exclude the possibility that the joint arrival of the signals may be due to the fact that one of them came from a point nearer the observer than the other. The required definition, then, must be in terms of the following operation: Let the distance A-B on the line joining the loci of the two events be actually measured off on some rigid reference body by laying down a measuring-rod in the usual manner; let an observer be placed at a point between A and B. and equidistant from them, and let him be provided with instruments (e.g., mirrors) "which allow him visually to observe both places A and B at the same time" or more precisely, which allow him to observe the arrival of light-signals from those places at the same time. If he then in fact perceives at one and the same instant the arrival of two light-rays known to have been projected or refleeted from A and B, the events indicated by the two signals (e.g., lightning-strokes at A and B) may be said to be simultaneous. Such, then, is the new experimental and physical definition of simultaneity from which revolutionary consequences are shortly to follow. It is to be borne in mind that, according to Einstein, this is the only definition of the term, applicable to physical and distant events, which has any meaning whatever.

(c) We pass now to the third step of the argument. The physical circumstances under which the specified experimental criterion of simultaneity might conceivably be appplied are of two sorts. system on which are situated, or to which are referred, the points and B (the sources of the light-signals) and the M mid-point between them, may remain at rest during the transit of the signals from A and B to M, or it may, during that interval, be in (unac-(elerated) motion in the direction of either A or B, relatively to ome other system of reference. 11 It can not be assumed a priori that the results of the test of the simultaneity of the events would be the same in the two cases; and (so runs the argument) it is easy to the that they could not be the same. If the system S is at rest and the test is applied, the events will, of course, as has already been implied. implied, be "simultaneous"; and the same is true with respect to any other system adjacent and parallel to the first along the axis on which the system adjacent and parallel to the first along the axis on which the system adjacent and parallel to the first along the axis on which the system adjacent and parallel to the first along the axis on the system adjacent and parallel to the first along the axis on the system adjacent and parallel to the first along the axis on the system adjacent and parallel to the first along the axis on the system adjacent and parallel to the first along the axis on the system adjacent and parallel to the first along the axis on the system adjacent and parallel to the first along the axis on the system adjacent and parallel to the first along the axis on the system adjacent and parallel to the first along the axis on the system adjacent and parallel to the first along the axis on the system adjacent and parallel to the first along the axis on the system adjacent and parallel to the first along the axis on the system adjacent and parallel to the first along the axis on the system adjacent and parallel to the first along the axis of the system adjacent and parallel to the first along the axis of the system adjacent and the sy which the light-rays move, and remaining at rest with respect to it. But if, while the light-signals are moving from A and B towards M,

10 Relativity, p. 26.

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the second system, S', is in motion with respect to the first in either direction, the signals emitted from A and B, respectively, can not reach the mid-point of that system at the same moment. If the system S' is moving towards the point B and away from the point A on the system S, then the rays proceeding from B will reach the mid-point M' sooner and those proceedings from A will reach M' later. The definition of simultaneity will not be satisfied for the observer on S', and he will necessarily conclude that the events at A and B (which the observer on the "stationary" system S finds to be simultaneous) are non-simultaneous. And since simultaneity "means" the joint arrival of signals at a point (initially) 12 equidistant from their source, it follows that the same events will be both simultaneous and non-simultaneous. It is here that it becomes evident that the second as well as the first clause of the radically experimental theory of meaning is explicit in Einstein's argument. If it were once granted that the real simultaneity of the events could be something other than what it is empirically known as by a given observer, the proof of the relativity of simultaneity to the state of relative motion or rest of the observer would not follow. We should, in that case, simply conclude that the joint-arrival of the rays was not a valid test of actual simultaneity except for bodies remaining at rest during the transit of the rays. The conclusion that both observers are right, though their judgments are contradictory with respect to the same pair of events-i.e., that there is no such thing as an absolute simultaneity of two events-presupposes the complete identification of the positive or negative results of the experimental test specified in the definition with the fact of simultaneity or non-simultaneity, as the case may be.

(d) A proposition asserting the simultaneity of two events is, obviously, an assertion concerning the magnitude of the time-interval between them—namely, that the interval is equal to zero. If, then, judgments about the simultaneity of the same pair of events must differ, when the reference-bodies used by the two observers are in uniform relative motion, it follows that time-intervals are not the same for the two systems, and that, in general, the determinations of time valid for the one will not be identical with those valid for the other. Thus "every reference-body has its own particular time; unless we are told the reference-body to which the statement of time refers, there is no meaning in the statement of the time of an event." The previously customary assumption that "the statement of time has an absolute significance, i.e., that it is independent of the state of motion of the body of reference, is incompatible with the most natural definition of simultaneity." This last, of course,

<sup>12</sup> There is here an equivocality which will be examined later.
13 Ibid, p. 32.

is an odd understatement by Einstein of the conclusion which ought to follow from his premises, namely, that such an assumption is one to which our minds can catch no intelligible import whatever.

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This reasoning has been so generally hailed as cogent and "epochmaking" by physicists and mathematicians that a non-mathematical philosopher might well be diffident about expressing any doubts concerning it which may arise in his mind—if there were any mathematics in it. But since there obviously is none—though, of course, it may be expressed in a mathematical form—and since it plainly falls within a province of logic with which philosophers have not been unaccustomed to deal, I shall now have the temerity to indicate what seems to me some fatal defects in the argument.

1. Let us first ask why a special definition is requisite for simultaneity-at-a-distance, after we are assumed to be already acquainted with the meaning of the term "simultaneity" as applied to items in a single perceptual field or to events occurring at a single place? The relativist's answer to this question is, of course, as follows: We are in quest of a definition or of definitions of simultaneity, the fulfilment of which can be experimentally verified by any one who may wish to pronounce upon the simultaneity or non-simultaneity of two actual events. Now, with respect to their mode of possible verification, simultaneity-at-one-place and simultaneity-at-a-distance must evidently differ. The former can be verified directly (or virtually so) by any observer who is at, or immediately adjacent to, the place where the two events occur, when they occur. But the latter can be verified only indirectly, for two reasons: first, the Observer can not be at once in two places, namely, at the places distant from one another where the events occur, and he must therefore judge as to their simultaneity by means of some report or signal, transmitted through space from the places of the events to his place; and, second, it is known (or postulated) that any such transmission occupies some finite time. This difference, then, in the ways in which the "simultaneity" can be verified, in the two instances, definitions of "simultaneity" itself, if the definitions are to be of verifiable simultaneity and therefore to be in terms of possible means of verification.

This seemingly simple reasoning invites some comments. It contains, it will be noted, the admission that before the special definition of simultaneity-at-a-distance is reached we already know the meaning of some specifically temporal relation between events which is called "simultaneity." We actually experience this per of relation whenever we are aware of the compresence of two or more distinguished items of sensory content in a single perception, and the relativistic physicist also objectifies this relation (in definition).

tion b, iii, above); he recognizes that it may obtain (apart from any percipient) between two physical events, provided that they occur at one place or are separated only by a negligible distance. This notion of the simultaneity-relation we can not, indeed, define in terms of any other sort of relations, for it is manifestly a logical primitive. But we can say what other notions do not enter into its meaning; in other words, we can tell from what concepts we are able to distinguish it. And it is clear that it is distinct from the concepts of spatial distance or proximity; for various sense-data may be spatially separated, by widely different distances, in the visual field and yet all be perceived as having the same relation of simultaneity. Likewise in the concept of the simultaneity of two physical events at the same place (admitted by the relativist to be ultimate and absolute), though the notion of spatial togetherness is associated with that of temporal togetherness, the two relations are obviously regarded as distinct by the relativist as by everyone else. There is, then nothing in the primary notions of either the relation of simultaneity taken by itself, or the relation of spatial distance, taken by itself, which makes it evident that the essential meaning of "simultaneity" must alter when the distances between the spatial loci of two events are supposed to be increased from zero, or some extremely small magnitude, to an appreciable magnitude. In short, the reason for seeking a new "definition" of "simultaneity," when the events whose simultaneity is in question are distant from one another, lies not at all in the already-accepted concept of the simultaneity-relation as such, but solely in the different situation of those events with respect to a possible verifier-of-their-simultaneity, who is subject, in his processes of verification, to the practical disabilities that he can not be in two places at once, and that he can not receive instantaneous signals from any distant places. One is therefore impelled to ask whether the new so-called definition, that of simultaneity-ofevents-at-a-distance, is really a definition of a quite different type of relation between events or whether it is merely a statement of a difference in the procedure by which the actual existence of the same kind of relation (i.e., the same relation between events that is empirically areas and are a same relation between events that is empirically areas and are a same relation between events that is empirically areas and are a same relation between events that is empirically areas and are a same relation between events that is empirically areas and are a same relation between events that is empirically areas and are a same relation between events that is empirically areas and are a same relation between events that is empirically areas and are a same relation between events that is empirically areas and are a same relation between events that is empirically areas and are a same relation between events that is empirically areas and are a same relation between events that is empirically areas and are a same relation between events that is empirically areas and areas are a same relation between events that is empirically areas and areas are a same relation between events that is empirically areas and areas are a same relation between events are a same relation between events are a same relation are a same relation between events are a same relation and a same relation are a pirically exemplified in the joint-perception of two sense-data, or in the joint-occurrence of two events at one place) can be ascertained under altered. under altered physical conditions. If the latter only is intended, Einstein's special of the mean Einstein's special definition (b, iii) tells us nothing about the meaning of simultaneity. ing of simultaneity, and is not a definition at all, but an inference, a reading-off of area in inference, a reading-off of one implication, or supposed implication, of a concept already defined cept already defined, or already understood without the need of definition. If, on the definition. If, on the other hand, Einstein's formula is to be construed as implying the strued as implying that, when the places of occurrence of events

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are distant, the "simultaneity" of these events is not at all the same sort of relation between them as that designated by the same term when applied to unilocal events, some awkward consequences follow. As a matter of terminology, at least, it is obviously an odd, arbitrary, and confusing thing to use the same name without distinction for two essentially different relations. If Einstein holds that physical events a mile, or 186,000 miles, apart can never be simulfaneous in the perfectly familiar sense in which the perceived motions of two fingers when I snap my hand are simultaneous, or in the sense in which two events occurring at points a millionth of a millimeter apart may be simultaneous, he would have done well, in the interest of clarity, to have invented a new term, and to have used it exclusively, when speaking of spatially separated events. failure of so careful a writer to make such a terminological distinction naturally suggests that he does not hold the view which would require that distinction. On the other hand, most of his argument can not be reconciled with such an interpretation. Usually he seems to conceive that he is presenting a real definition of a distinct concept which need in no degree conform to the recognized meaning of "simultaneity." And it is essential that his procedure should be 50 construed if the proof of relativity of simultaneity (c, above) is to follow. For, as has been remarked, in senses b, i or b, ii, simullaneity is, for the relativist as for others, an absolute and unequivocal or dyadic relation; two events either have it or do not have it; but the relation of simultaneity in the case of distant events is for him by its very nature a respective, or triadic, relation; the same two events may have it and not have it, depending upon a certain other relation between them and different observers or verifiers, or the reftrence-bodies on which they are.

Let us, then, interpret Einstein's argument in the second of the two ways which we have been distinguishing. The nature of the relation between events which is to be called "simultaneity" when the events are at distant places is not supposed to be already known to us from our knowledge of what is meant either by the simultaneity of data in our experience or by the objective and absolate simultaneity of events at one place (e.g., of the arrival of two signals at a common point). The latter mode of relation, it is assumed at a common point. further a common point). The latter mode of it could, no further a common point). The latter mode of it could, no further a common point. further definition would be necessary. Now the proposition that it can not so subsist in the case of such events is not self-evident it requires proof. The proof, it will be said, is contained in the radically experimental doctrine of meaning, of which the truth is by the relativist relativist presupposed. If every concept which is to have any meaning at all ing at all must be defined in terms of specific experimental means of verifying its fulfilment or non-fulfilment in any actual case, then obviously, wherever the means of verification necessarily vary, the meaning of the concept will vary—i.e., we shall have to introduce by a new definition, an essentially different concept.

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But this last, as a generalization, would be an amazing and preposterous thing to assert. It would imply—to take a crude, but for that reason all the more illuminating, example—that if a bedridden cripple should look out of the window and observe the rain falling on one man, and should then observe another man, whom he could not see through the window, entering the room with wet clothing, his inference that rain had fallen upon both could not have for him the same meaning in the two cases, i.e., that the concept "rain-falling-on-man" would require in the second case a new definition-would not, in short, be the same concept. In more general terms, the proposition that concepts can never be identical where modes of verification are different would signify that no inferred fact could possibly be the same kind of fact—answering to the same definition—as any directly perceived one, since inference and direct perception are radically dissimilar modes of verification. If it were true that, wherever means of knowledge or grounds of belief differ, the nature of what is known or the import of what is believed must necessarily likewise differ, the greater part of science would manifestly be impossible; for science largely consists in taking concepts of qualities or relations made familiar to us in perceptual experience and extrapolating them into places or times in which the existence of the given qualities and relations is not, and can not be, directly and perceptually experienced by those individuals—be they historians, geologists, physicists, or psychologists—who perform this act of extrapolation. Science, of course, employs certain tests for determining when such extension of a given kind of attribute beyond the instances in which its presence can be immediately observed is legitimate and mate and when there is no sufficient justification for it; but the plight of the man of science would be desperate indeed if he were compelled to admit that as soon as he begins, on inferential grounds, to extrapolate his empirically-gained concepts, they either change their meaning their meaning or cease to have any meaning at all. But into this absurdity the stieft. absurdity the stictly experimental theory of meaning the theory, that is, which constructed the stictly experimental theory of meaning the must that is, which seems to be implied by Einstein's argument—nust
—fall. Identifying the be cog. —fall. Identifying the ratio cognoscendi with the fact to be cognized—asserting in the ratio cognoscendi with the fact to be spokes. ni2d—asserting, in the words of one of its most consistent spokes man, that "we man man, that "we mean by any concept nothing more than a set of operations, physical operations, physical or mental," and that "the concept is synonymous with the correct operations, and that "the concept is synonymous with the corresponding set of operations" 14 Bridge

<sup>14</sup> Bridgman, The Logic of Modern Physics (1927), p. 5.

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necessarily implies that diversity of operations is always equivalent to diversity of concepts, that the presence of one and the same quality or relation can not possibly be attested by dissimilar experimental criteria.

It is, then, impossible to accept the major premise necessary to prove the conclusion that the primary concept of the relation of simultaneity can not retain its meaning when the original direct method of its application to events is for some reason, such as the spatio-temporal remoteness of the events from the observer, no longer available. No reason whatever appears for supposing that this mode of relation may not obtain between pairs or groups of events irrespective of their particular spatial relations, either to one another or to an observer. Two distant events, therefore, may be simultaneous in precisely the same sense as two immediately adjacent events; and what that sense is we know as well as we know the meaning of any relational concept whatever, since the nature of the relation is experienced by us at every moment. The "what" of "simultaneity," in short, may be—and, if the word is to be used in the sense familiar to all mankind, must be—the same wherever the events of which it is predicated; but the "that" must, of course, be established by a special procedure when the perception of the events can not itself be actually or virtually simultaneous with their occurrence. It is, of course, conceivable that no such procedure is available—that "simultaneity" in its primary sense may be necessarily incapable of verification when the events are distant from the observer; but if this could be shown to be the case, it would not follow that such a relation can not hold good between such events, or that some other kind of "simultaneity" must thereupon be defined. All that would follow would be the necessity of recognizing certain limitations of our possible knowledge. We obviously can "mean" all manner of things which we have not verified, and even things which we can not verify; and the attempt at verification itself presupposes an already meaningful concept or hypothesis which would be unaffected in its import even though the attempt to determine its truth should be a failure. The experimental theory of meaning is, in fact, radically opposed to the spirit of scientific empiricism, in so far as it declares that a quality or relation which, in certain instances, is actually exemplified in experience can not exist in instances beyond the reach of experience; and, of course, lo say that the concept of it has no meaning in the latter instances is Way of saying that it can not exist in them. 15 It is not, however—

As Professor W. D. MacMillan has observed, "to say that simultaneity does not exist because it is unattainable in practice is like saying that a straight line does line does not exist because it is unattainable in practice is like saying that then but Reomet. Shall we then but geometry into the discard because it is ambiguous and without meaning?

(4 Debate (4 Debate on the Theory of Relativity, 1927, p. 61.)

as we shall see—true that simultaneity at a distance is necessarily unverifiable.

If, then, we should attempt to carry out rigorously the radically experimental theory about meaning and apply it to other concepts as well as to that of simultaneity, we should be compelled to transform physics, and our ordinary view of nature, far more widely and sweepingly than Einstein himself has proposed. If "a concept does not exist for a physicist until he has the possibility of discovering whether or not it is fulfilled in an actual case," we must relegate to the limbo of the unmeaning a whole series of concepts which most physicists and astronomers who suppose themselves to have embraced the Special Theory continue cheerfully and unsuspectingly to employ. One of the first to go would, clearly, be the concept of light as a thing that moves. We have, and can have, no experimental acquaintance with light as a "traveller"; no man at any time has seen light where there is no matter; we must, in Bridgman's phrase, cease to talk about light and speak only of "illuminated objects." The conception of a luminiferous somewhat that passes invisibly from one such object to another is one of those interpolations which the science of the past has made—and certainly with very happy results—for the purpose of linking actually observed things together into a coherent system; but such interpolations must be eschewed by a radically experimentalist philosophy of nature, not merely on the ground that they are unverifiable, but for the more fundamental (supposed) reason that we "can attach no meaning" to the terms used ostensibly to define them. Other common notions which must similarly be discarded by such a philosophy have been pointed out by the only contemporary physicist known to me who makes a near approach to consistency in his radical experimentalism. Since, Bridgman observes, "local time" has been shown "not to be a satisfactory concept for dealing with events separated by great distances in space or with phenomena involving high velocities," we consequently "must not talk about the age of a beam of light, although the though the concept of age is one of the simplest derivatives of the concept of local time. Neither must we allow ourselves to think of events taking place in Arcturus now with all the connotation at tached to events taking place here now. It is difficult to inhibit this habit of thought, but we must learn to do it." It does not mean anything "to the learn to do it." It does not mean anything "to talk about the entire present state of the universe independent of the independent of the process by which news of the condition of distant parts is determined by which news of the condition of distant parts is determined by the condition of the c tant parts is determined by us." Just as most of the propositions about temporal tions about temporal relations customary in astronomy have, according to this logic relations customary in astronomy have, cording to this logic, no signification, so do most of the propositions

16 The Logic of Modern Physics, p. 76.

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about spatial relations; for example, "to say that a certain star is light years distant is actually and conceptually an entirely different kind of thing from saying that a certain goal is 100 meters distant." 17 Nor is it only the physicist and the astronomer who must completely alter their notions of what they are talking about. and admit that they have hitherto been, for the most part, using words without sense; the historian and geologist are summoned to an equally humiliating admission and an equally difficult amendment of their ways: "All our other concepts must be modified when applied to the remote past; an example is the concept of truth" (i.e., the truth of retrospective propositions). "It is amusing to try to discover what is the precise meaning in terms of operations of a statement like this: 'It is true that Darius the Mede arose at 6:30 on the morning of his thirtieth birthday.' " What is evident is that if the very meaning of all propositions must thus be restated in terms of possible processes of experimental verification external to the event to be verified, then the proposition that one has existed comes to signify no more than certain actual or possible performances on the part of posterity—all of whom in turn must pass in the same manner, not into mere oblivion, but into obliteration from the category even of that which has been. Pastness can never be experimentally verified; ergo, all propositions in the past tense become meaningless. Yet, oddly enough, even the almost radical experimentalist whom I have been quoting seems to suppose that there was such a thing as a "remote past"—though its remoteness and preteriteness are, most obviously of all, incapable of description in terms of any operations which present or future experimentalists might conceivably perform.

I am well aware how strong a hold that plausible but (as I can not but think) extremely muddled doctrine, the experimental theory of meaning, has upon the minds of many contemporaries, especially amoung physicists; I therefore do not underestimate the resistance and the misunderstanding—which the foregoing observations are likely to encounter. I shall, no doubt, seem to some to be attempting, the worst philosophical manner, to reason about a question of physics from a vague a priori concept not defined in experimental or "physical" terms; whereas, in fact, I have been chiefly urging that we have, as the relativist admits, one unequivocal notion of simultaneity which is given us through experience; that the word ought never to be used to designate anything but the type of relation which corresponds to this empirical concept; that, in other Words, we ought not to go about getting up, by free definition, new meanings" of simultaneity; that in accordance with this one con-

17 Ibid., p. 18.

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cept all our judgments about what events are or are not simultaneous should be determined; and that, finally, we ought not to fall into the extraordinary and ruinous error of confusing the means of inferring the existence of this or any other relation or quality, in cases in which its existence is not directly observable, with the nature of the fact to be inferred.

While these considerations, if true, suffice to invalidate the primary premise upon which Einstein's argument concerning simultaneity rests, the acceptance of that premise would not render the argument convincing. It has numerous other, entirely independent logical defects, as I shall endeavor to show in the next installment of this paper.<sup>18</sup>

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#### HOW "PROPOSITIONS" MEAN

T T is very gratifying to observe that in America the critics of Pragmatism (thanks no doubt to the numbers of pragmatists they encounter!) are beginning to understand it, whereas in Europe they have never yet got to the point of trying to do so. The former are in consequence raising real difficulties, of which the discussion tends to philosophic progress, and are not merely "ruminating." To an old controversialist like myself, therefore, it was a real pleasure to read Professor Hocking's apposite, graceful, and penetrating paper on "Action and Certainty," and especially his list of the five propositions which give him pause (p. 228). They are clearly of primary importance for any form of Pragmatism, as is Professor Hocking's challenge to the first of them, that "the meaning of concepts and propositions is always functional." He infers that "if the meaning were to be found in the working there should be a unique and unambiguous correspondence between these entities: this correspondence spondence does not exist," and so he finds it impossible to accept "the correspondence of meaning and working." I agree that Professor Hocking's criticism touches a vital spot, and if it really penetrated beneath the surface, it would be fatal; but I think I can show him that it does not.

I shall first endeavor to show that the desiderated correspondence between meaning and working does exist, if meaning be taken as personal and not as verbal, i.e., as it is and must be taken by Pragmatism. For if we inquire what is meant by saying that "a proposition's meaning is functional," we speedily discover that what it

18 To be continued in the next issue, No. 24.

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<sup>1</sup> This Journal, Vol. XXVII, No. 9, pp. 225-238.

means is that a proposition must be used, to discover its meaning. A bare proposition in the abstract, when not in use, actually means nothing: although potentially it means whatever meaning it can be made to convey in a suitable context. But when it is used it does not remain a "proposition." It becomes a judgment, which was true (or false) in its particular context, and its truth-claim must be understood and established in connection with that. All this is an easy deduction from Alfred Sidgwick's definition of Pragmatism, that meaning depends on application.

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Now Professor Hocking's difficulties seem quite clearly to arise from his overlooking this. This is why he can ask with which of an indefinite series of (future) "programs of action" "the meaning of the proposition" is to be identified, and can infer that it must be distinguishable from any of them. Clearly this conclusion has substituted the verbal for the personal meaning, and obliterated the difference between the judgment and the proposition. If he had adhered to the pragmatic insight that all thinking is conditioned by a problem, that every proposition to have an actual meaning must be judged, and that when it is used its meaning is relative to its particular context, he would have seen that there is an alternative answer to his question. Pragmatism must say "the meaning of the proposition must be the sum of the meanings it can convey when it is used. These, no doubt, can not all be enumerated in advance of their use; but there is no reason why they should be." True, "no finite series of verifications" can exhaust the uses, and so "constitute the truth" (p. 229) of the proposition; but then it is not the truth of a verbal formula that the pragmatist is seeking; he is satisfied if he can formulate a judgment that works, and is content if he can express and convey a meaning which will answer his question, extricate him from his difficulty, and solve his problem. Nor does he think that a proposition to be used must predict all future knowledge and anticipate the whole future of science; science is not concerned to formulate truths "eternal" in this sense, but content to solve its present problems and to leave to faith its future progress.

Professor Hocking's own illustration, Jefferson's dictum about human equality, brings out clearly this flaw in his argument. As he sees, in Jefferson's own use, his dictum had an ad hoc use, and was not meant literally. It plainly did not include all men, and was not intended to assert the equality of slave and free, nor to put Jefferson's slaves on an equality with himself. Why not, seeing that verbally the dictum will cover this extension? Simply and solely, because Jefferson did not mean it that way, and was not understood to mean it so. That it can verbally be used to assert a strictly universal equality, by Professor Hocking and others, is

simply irrelevant to the question of what it meant for Jefferson and his audience. Conversely, Jefferson's historic use in no wise binds Professor Hocking. He has a natural and inalienable right to use the proposition to serve his purposes. He can use it in any way he finds convenient, though he will probably find that its prior uses to some extent tie his hands (or his tongue); they may sufficiently vitiate its verbal meaning to render it expedient to explain that his meaning is no longer quite the same as Jefferson's or Aristotle's.

I would suggest, therefore, that Professor Hocking has been led astray by the ambiguity of "meaning." Having failed to distinguish between the potential and verbal "meaning of the proposition" and the actual and personal meaning-in-use, he has fallen a victim to the fatal confusion of judgment and proposition in which intellectualist logics are so deeply steeped.

This same explanation will dispose also of his difficulty with the meaning of "conceptions," which is really a pseudo-problem, because conceptions are meanings. He conceives himself as being hungry, espying a red apple, and recognizing it as "a possible food" (p. 229). But he denies that the apple's redness has any "essential relation to its food-interest." This would appear to mean that

a red apple does not always and everywhere excite in him an irresistible impulse to devour it. Yet even apart from the fact that in apples redness would seem to connote ripeness and so to have a bearing on edibility, it is difficult to see the relevance of this objection to the actual case. In his actual circumstances the sight of a red apple would be welcome in a way a green one would not be, while

the fact that in other circumstances he might relish a baked potato is wholly irrelevant. For ex hyp. he is looking for apples: baked potatoes do not grow on trees, and none would be in sight. There is no different to the contract of the

is no difficulty, therefore, in supposing that the case is actually one of "apple-or-nothing," and that for the time being his apple-idea and his food interest would coincide.

Professor Hocking's third difficulty, about the pragmatist denial of eternal truth, would seem to spring from a confusion between "eternal" and "stable." His ad hominem argument against the pragmatist, that a recognition of "stable" commits him to "eternal" truth, is clearly unsound. For a certain stability may be desirable in truths, while their eternity is fantastic or unmeaning. Thus "stable" would be a substitute for "eternal," not a synonym. Actually "eternal" is a very ambiguous, vague, and pretentious term, and intellectualists hardly ever trouble to explain what they mean by it. Sometimes they only mean that when a truth has once been asserted the historic record stands, and it remains a fact that it was asserted then. At others they mean a (more or less covert) claim

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that because a truth has been found to hold on some occasion it will be found to hold on all subsequent occasions. But it is clear that this claim to prejudge the future and to arrest the course of change is fantastic and unsubstantiated; it is in no way implied in the possibility of valuable ("true") judgment.

Pragmatism, therefore, is content with "stable" truth, and moreover conceives stability as admitting of degrees and as relative to
purpose. It recognizes that in a changing world there may yet be
objects (whether truths or things) which change relatively slowly;
so slowly that they do not defeat a purpose which takes them as
unchanging. This assumption may be conscious or unconscious, a
fiction or an oversight; but it need not vitiate an argument based on
it, if the changes are irrelevant for the purpose in hand. Hence to
argue that if change is universal and truths are temporary, all
reality dissolves and nothing knowable remains, is essentially a
fallacy of the sort committed by Mark Twain when he essayed to
use a glacier as a vehicle of descent into the valley. It is a refusal
to recognize the reality of time, and to calculate the rate of the flux.

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### IN DEFENCE OF AN IMPRESSION

IN view of Mr. Cairns' emphatic dissent from my impression of phenomenology ("Mr. Hook's Impression of Phenomenology," this Journal, Vol. XXVII, p. 393) I am at a loss to understand why he left the main point of my criticism of Husserl unanswered, contenting himself with a strained exegesis of incidental remarks considered out of their context. All of the characterizations of Husserl's Position which Mr. Cairns declares to be ambiguous get their meaning in the light of this criticism. I tried to show that there were two strands in Husserl's philosophy which could not be woven together. On the one hand, we have a belief in the objectivity of essences; on the other, the doctrine that these essences are necessarily the product (Erzeugung) of a transcendental consciousness or Mind (konstituierende Subjectivität). In the few sentences on Husserl which prefaced my discussion of Heidegger in "A Personal Impression of Contact Wol XXVII p. Contemporary German Philosophy" (this Journal, Vol. XXVII, p. 141) 141), I maintained (1) that Husserl's logical realism and transcendental dental idealism were incompatible, and (2) that it was his legical realism rather than his idealism which won him a following in Gerhany (e.g., among the Catholic philosophers). In another article entitled "Husserl's Phenomenological Idealism" (this Journal, Vol. XXVII, p. 365), I amplified and substantiated these criticisms in terms of the position taken by Husserl in his Formale und trans. cendentale Logik.

Having overlooked the chief point of my remarks, Mr. Cairns' criticism of derivative statements does less than justice to their meaning. I mention only those misinterpretations which bear upon the

main argument.

(1) I had innocently written that after the Logische Untersuchungen, Husserl, "instead of a new logic presented a new psychology." Mr. Cairns parades the titles of all of Husserl's books and coolly concludes, "The titles alone should show that Mr. Hook is wrong in intimating that any of these works pretends to offer a new logic."

This "intimation" exists nowhere else but in Mr. Cairns' imagina-I stated as a matter of fact that instead of the new logic which was expected to follow the first volume of the Logische Untersuchungen, Husserl produced a "new" psychology. Now one might deny that his writings constitute a psychology. It is hard to find another word to characterize the subject-matter of an Aktphänomenologie. But to call the Ideen and the other essays a new psychology is not to say that they were offered as a new logic, is not to "intimate" that there was any intent upon Husserl's part to take in his readers. But Mr. Cairns crowns his peculiar interpretation with a remark which is truly astonishing! He writes, "If the recentness of Husserl's Formale und transzendentale Logik justified ignoring it, Mr. Hook would be justified in saying that Husserl's work published subsequently to the Logische Untersuchungen did not contain a new logic." Now this statement says very definitely that the Formale und transzendentale Logik is a new logic and insinuates that I was ignorant of it when I wrote my article. The insinuation I can afford to disregard, the more so as my "Personal Impression" bears internal evidence that I was acquainted with it. But the important and eloquent fact is that the "Formale und transzendentale Logik" is not a new logic and does not profess to be one. Mr. Cairns was misled by the title. Had he read the book instead of triumphantly citizen it. phantly citing it, he would have found it contains no logical principles but a delivery ciples, but a detailed discussion of the relations between psychology, phenomenology, formal logic, ontology—in short, an elaboration of positions already in the positions already in the positions already in the property of the p positions already sketchily taken in the earlier writings which Mr.

Cairns admits were not intended to be "new" logics.

(2) In calling Husserl's phenomenological analysis a logicized version of "pre-Lockean psychology" I meant to call attention to the methodological elements Husserl shares with Descartes.

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method is possible. With him he accepts the essentially psychologiof clarity and simplicity as the test of truth. "Es gilt dem 'Prinzip aller Prinzipen' treu zu bleiben, dass vollkommene Klarheit das Mass aller Wahrheit ist." (Ideen, Sec. 79.) announces a book on Cartesian Meditations.) From this there follows the belief in immediate knowledge which in turn entails the view that an element of absolute certainty is involved in all cognitive activity.

(3) When I attributed the doctrine of hypostatic essences to Husserl I pointed out that this legitimately followed from his belief in immediate knowledge and theory of evidence. essences (e.g., the Irrealen) grasped by rational intuition have no necessary reference to a class of real or possible exemplifications in existence. It is in this connection that one thinks of the logical realism of Russell's Principles of Mathematics. Husserl in order to distinguish between intelligible meanings and nonsense syllables like "virtuous triangles" relapses into the idealistic prejudice of assuming that all essences or meanings are ultimately produced (erzeugt not endeckt) by some super-naturalistic consciousness. This "logical solipsism" (Husserl's own phrase) does not mitigate the doctrine of the hypostasis of essence in the eyes of naturalists. It merely creates a difficulty for which he must answer to logical realists who believe that meanings are independent of both existence and consciousness. It also creates a difficulty for those who wish to expound his philosophy of finding a proper work to explain how ideal objects can be independent of consciousness and yet be what they are in virtue of an act of ursprünglichen Erzeugung. I used the phrase "imbedded in the content of consciousness" to indicate that both an ideal meaning and an act were involved. Mr. Cairns rings the changes on this phrase and confesses himself puzzled. The meaning, however, is clear from the context.

Husserl's thought has been developed in two directions clearly discernible in the writings of his school. His most promising followers have been interested in giving us a Gegenstandsphänomenologie rather than an Aktphänomenologie. The point of my remarks is that a naturalistic realist who refuses to identify the act of knowledge in any way with the subject-matter of knowledge must take up the cry of a former follower of Husserl "fuer die Gegenstandsphänomenologie, gegen die Aktphänomenologie." One can learn a great deal from Husserl without embracing idealism of the

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#### BOOK REVIEWS

The Searching Mind of Greece. John M. Warbeke. New York: F. S. Crofts & Co. 1930. Pp. xii + 464.

This book is a comprehensive and systematic exposition of An. cient Philosophy from Thales to Plotinus. Of the 447 pages of text, a few over one hundred are devoted to Plato, and slightly more to Aristotle. In addition to a Preface and an introductory chapter on The Greek Spirit, there are three parts, as follows: "Part One: The Quest for Mechanism," covering pre-Socratic speculation and the Atomists, and ending with a résumé entitled "From Gods to Atoms"; then "Part Two: The Quest for Purpose Dominant," treating of the Sophists, Socrates, the minor Socratic Schools, Plato, and Aristotle, and ending with a chapter on "The Academy, Pyrrho's 'School,' and the Lyceum'; and finally "Part Three: The Quest for a Way of Life," consisting of five chapters on the Stoics, Epicurus, Hellenism, Greek Ideas in Rome, and an Epilogue. book is completed with a classified bibliography of about 110 titles, and a good index. It thus comprises the material that is ordinarily embraced in a college course on ancient philosophy, and the author states in the Preface that he writes primarily for students in such courses.

There should be no quarrel with such a purpose, for the study of Greek philosophy is thoroughly worth while, and any book that attempts to bring it within the reach of our students is to be welcomed. Furthermore, there is a certain advantage in having an American author for American students in this field. not wish to minimize the cosmopolitan and essentially general nature of scholarship, and least of all under a recommendation that American youth should know Greek thought; yet education actually exists in national systems, and something is gained when a subject is presented for the first time by a master who is within the same system as his pupils. Now in our own educational system the study of Greek philosophy has been particularly unfortunate in this respect. As a field for scholarly research, it has been regarded as a kind of No Man's Land between the classicists and the philosophers; and our students, left without authoritative domestic interpretation, have tended to look upon Greek thinkers as both ancients and foreigners. There is thus a pedagogical advantage when an American author, like Professor Ward a drawk prelike Professor Warbeke, who knows both philosophy and Greek, present Greek philosophy and Gre sent Greek philosophy to American students in such a way as to bring out the limit of the conbring out the living potency of the ancient thought and the continuity of our culture. tinuity of our culture with these Greek ancestors.

Since Professor Warbeke's main purpose is to introduce be-

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ginners to the study of Greek philosophy, he avoids, as far as possible, the technical and the controversial aspects of the subject, and all the paraphernalia of historical science except for a few brief references to authorities in footnotes. In some cases this attitude issues in unqualified assertions that rest on doubtful evidence, or dogmatic interpretations that would certainly be questioned by some competent scholars. Such, for example, is the statement (p. 158) in regard to Plato's reasons for going to Western Hellas the first time: "But whatever other motives may have been present, Plato was primarily interested in coming into first hand contact with the Pythagorean school, especially with the ethical and political experiment of Archytas at Tarentum." This is a perfectly plausible motive; but it is probably no more than plausible, although it is given here as a fact and as primary. So also the assertion on page 98 that it is "quite definitely true" that Anaxagoras was invited to Athens by Pericles. In general, the author seems willing to accept more of the late biographers than is usual at present. He is also not above quoting the trivialities of these scandal-mongers, for example, the conjecture of Aristides that Plato went to Sicily for the sake of its gastronomic delicacies (p. 158). But there is no harm in a little indulgence of this kind; after all, Plato presumably had a palate, and the mere suggestion that he may have been conscious of it tends to keep him human. In other words, Professor Warbeke talks of his philosophers as real beings, just as he treats their ideas as real ideas.

A history of philosophy that is laid down on these principles has to take account of three types of relations: (1) the relation of an author to his culture and environment in general; (2) his relation to particular philosophical predecessors and contemporaries; and (3) our relation to him. It is possible for an historian of philosophy to neglect entirely the first of these, on the ground that philosophy proper has no relation to time or place, but is an argument that must be comprehended and evaluated in its abstractness. But Professor Warbeke takes a different and, I think, a sounder attitude in giving for each philosopher his circumstances of time and place, and setting him solidly in his historical environment. A wide knowledge of Greek literature and history and an obvious enthusiasm for the subject are effectively and on the whole judiciously used to this and

In Greek philosophy it is more difficult to be sure of a thinker's relation to previous thinkers than in the modern period. We know, for instance, that Plato was profoundly influenced by Socrates, and Aristotle by Plato; but precisely what form this influence took has to be determined by a more complicated process of historical and

philosophical interpretation than would be necessary for defining Spinoza's debt to Descartes, or Hume's effect on Kant. is important, not so much for the sake of mere historical truthful. ness, but mainly in conditioning an attitude toward the development of philosophy: is philosophy an endless threshing of old straw, or is there a genuine evolution of thought that operates through its greatest figures? On this point Professor Warbeke, like most of us, assumes that the ancient thinkers had their predecessors in mind in developing their own theories; Parmenides had to meet the contentions of Heraclitus (p. 54), Empedocles attempted to mediate between Parmenides and Heraclitus (p. 64), and the Atomists tried to avoid some of the embarrassments of Parmenides (p. 82). The difficulties of a position become evils, the overcoming of which leads to new positions. This supremely dialectical aspect of philosophy is kept steadily in view throughout the book, but without a silly overemphasis; and thereby a reader gains the feeling of a continuity of development.

Our relation to the speculations of the past may be treated in either of two ways. One may simply translate, quote, paraphrase, and collate the originals, in the belief that the task of the historian is mainly editorial and that "in the long run the positive construction must be left to the individual student, and no two students will see quite alike" (Burnet, Greek Philosophy, Part I, p. 3). Or one may expound, discuss, and modernize in the attempt to bring home the universal values of the material by clothing them in present-day The advocates of the former method tend to criticize the latter for illegitimately reading into originals meanings and suggestions that actually are not there, and thus amounting to a guess at what an author would have said if he had not labored under the disadvantage of living so long ago. The advocates of this second method are apt to disdain the former method as producing a mere show of dead men's opinions, satisfactory only to intellectual antiquarians and those "learned men to whom the history of philosophy (both ancient and modern) is philosophy itself" (Kant, Prolegomena p. 1). The historian of philosophy is thus confronted with unpleasant alternatives, and he usually tries to straddle; but Professor Warbeke boldly and consciously chooses the modernizing interpretation and line usually tries to straduct, and the usually tries to straduct tries and tries to straduct tries and the usually tries to straduct tries and tries tries tries to straduct tries tries to straduct tries terpretation, and systematically coördinates Greek conceptions and hypotheses with our own (p. ix). "Mechanism," "nominalism," "pragmatism," "behaviorism," "tropisms," "the emanation-theory of light," "Weismannian Ids and Biophors," and "things in themselves" appear in this service without chronological discomposure, and usually it and usually, it must be said, without confusion of the ancient and the modern idea. By the modern idea. Phrases like "a modern extension of," "known

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in modern times as," "might appear to be a parody on," "was dimly apprehended," are used at the same time to suggest similarity and preserve distinction. Professor A. E. Taylor's recent volume on plato has given us a taste of this sort of thing, but Professor Warbeke far out-Taylors Taylor. Still the American is writing for more elementary students, and what is in good taste here might be unchaste before a more scholarly audience. Exegesis is one thing, evangelization another. Nevertheless, the path of the evangelist, which Professor Warbeke has chosen, is indistinct and dangerous; and I can only say that his route seems justified by his objective, and that he has ordinarily managed to stay on it.

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How hazardous is this attempt to help the unlearned to a complete appreciation of the past may be gathered from a glance at the author's employment of the device known as the historical neriod. In order to enable his readers to grasp the fundamental tendency of pre-Socratic speculation, he entitles that section of his book which deals with this period "The Quest for Mechanism"; and on page 97 he justifies this caption with the statement that "the dominant motive, without exception, in the whole pre-Socratic philosophy from Thales to its dramatic climax in Atomism, was mechanism." Likewise "The Quest for Purpose Dominant," and "The Quest for a Way of Life" introduce the later periods. Now I do not question for a moment the usefulness of the notion of historical periods, and if I allow the period, I must also allow the tendency that characterizes it. But both periods and tendencies, if they are made too concrete, become pure illusions; and if they are made too definite, they warp and strangle the individuality of different minds. I do not query Quests; but to think of Parmenides as questing for mechanism, or of Aristotle's Organon as what was found after a hunt for purpose, or to conceive the search for a way of life so as to include Epicurus and exclude Plato seems to me to carry elucidation to the point of obfuscation. These are no more than by-products of the method which Professor Warbeke adopts and they can not spoil the whole; but they mar it.

Professor Warbeke's interests are as wide as philosophy itself, and he is therefore qualified to do justice to the many sides of Greek thought. He does not omit Plato's interpretation of art or Aristotle's doctrine of property on the ground that they lie beyond the bounds of metaphysics; nor does he ride a logical or an ethical hobby. Moreover he can write. His style is easy, lucid, frequently a little metaphorical and poetic, but not confusing and not mart in a cheap way. Finally, the book is very well printed with large type and few errors. It should prove successful in bringing more

students under the "potent inspiration" of Greek thought.

ROBERT SCOON.

PRINCETON UNIVERSITY.

The Living Mind. WARNER FITE. New York: Lincoln MacVeagh, 1930. Pp. ix + 317. The Dial Press.

This book, with the exception of the first chapter, is a collection of essays written for various magazines between 1908 and 1918. Here Mr. Fite presents the "personal" view of mind which is familiar to the readers of Individualism and Moral Philosophy. In the first chapter two questions concerning consciousness are discussed: (1) does consciousness make a difference in human life and if so, what difference? and (2) what is consciousness? is the more critical question and the essays in the volume are primarily concerned with it.

Affirming that consciousness is a reality, Mr. Fite denies that it is composed of mental states as revealed through introspection or of behavior as described by the behaviorist. The real distinction between consciousness and non-consciousness lies not in the subjectmatter, but in the point of view. Consciousness is the world of the agent; non-consciousness, the world of the observer. For the agent his act is an expression of reason; for the observer, the effect of a cause. The agent's world is private and is determined by the principle of choice; the observer's world is public and reflects the causal system of nature. For the former the world is poetry and art; for the latter it is science.

Mr. Fite proceeds to show how certain thinkers, certain systems, and certain interpretations of social life have been led astray by too exclusive an emphasis on the observer's viewpoint. Eucken had the right idea of the supremacy of consciousness, but he did not develop its implications with respect to social life and science. Russell, leaving consciousness out altogether and denying the practical value of philosophy, revels in a barren metaphysics of symbols. Pragmatism is inadequate because it underestimates reason as a part of personality and overestimates needs of the bread-and-butter variety and because it does not fully recognize the efficacy of the object in its theory of truth. Neo-realism, following uncritically the footsteps of natural science, fruitlessly endeavors to describe the world from nobody's point of view. Intellectualism without affection and romanticism without analysis are impossible. A genuine both in analysis are impossible. Believer both in analysis are impossible. both in analysis and in a point of view. The observer's point of view has led to file in a point of view. view has led to false interpretations of advertising, economic theory, birth control, psychoanalysis, and laboratory psychology. Assuming the observer's paid to t the observer's point of view, they exhibit man's social behavior as the result of natural (non-rational) causes. Mr. Fite properly and very effectively characteristics. very effectively shows that the man with whom they deal is not the rational man that were that the man with whom they deal is not the rational man that we all experience directly, but an unconscious man who does not think.

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The book is well written and shows a fine insight into many problems. Since it is on mind, it seems hardly fair to raise questions concerning the nature of non-mind. There are, however, many problems concerning non-mind and its relation to mind which need to be solved before an adequate theory of mind can be presented. But Mr. Fite disarms all criticisms on such topics when he remarks on page 5: "The question, what is consciousness? is therefore an eternally critical question and never more alive than in the present. Of this question I will call this a volume of studies, in the pious hope that they are only sketches preliminary to something more rounded and complete." With nothing but praise for the present volume, the reviewer looks forward with eagerness to the more rounded statement.

W. B. MAHAN.

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#### JOURNALS AND NEW BOOKS

JOURNAL OF PHILOSOPHICAL STUDIES. Vol. V, No. 20. The Earl of Balfour: A. Wolf. Science and Art (II): S. Alexander. The Problem of Artistic Production: L. A. Reid. Causal Determination: Its Nature and Types: J. E. Turner. God and Man: C. C. J. Webb. The Psychology of Religious Dogma: R. H. Thouless. The Conception of Excess-Value in Biology: James Johnstone. Right and Good: The Contradiction of Morality: W. G. de Burgh. Philosophical Survey. The Oxford International Congress of Philosophy.

THE MONIST. Vol. XL, No. 4. The Descriptive Theory of Science: H. H. Price. Mathematics and Emergent Evolution: O. L. Reiser. Mathematical Antinomies: L. J. Lafleur. The Problem of Incompatibility in the Philosophy of Organism: Gregory Vlastos. The Problem and Postulates of Epistemology: N. V. Banerjee. Contradiction, Logic, and Reality: B. M. Laing. An Examination of Hume's Theory of Relations: M. R. Annand. F. H. Bradley on Idea as Image and as Meaning: E. W. Hall. Mr. Russell's Theory of Perception: J. H. Woodger. Florian Cajori—an obituary by David Eugene Smith

Briffault, Robert: Rational Evolution. (The Making of Humanity.) New York: Macmillan Co. 1930. 302 pp. \$3.50. (Rational Evolution is a completely rewritten edition of a book by the same author published originally in 1919 under the title, The Moring of Humanity. The latter was reviewed in this Journal, Vol. XVIII, pp. 216-222.)

Driesch, Hans: Philosophische Forschungswege Ratschläge und Warnungen. Leipzig: Emmanuel Reinicke. 1930. ix + 121 pp. 5 M.

Höffding, Harald: Jean Jacques Rousseau and His Philosophy. Translated by L. E. A. Saidla and William Richards from the second Danish edition. With a New Preface by the Author. New Haven: Yale University Press. 1930. xxiv + 165 pp. \$4.00.

Isbyam, I. C.: Infinity and Ego. An Experimental Study in the Psychology of Self-Consciousness. London: C. W. Daniel Co. 1930. 25 pp. 1/-.

Leighton, Joseph A.: The Field of Philosophy. An Introduction to the Study of Philosophies. Fourth edition, revised and enlarged. New York: D. Appleton & Co. 1930. xii + 639 pp. \$3.50.

Muirhead, John H.: Coleridge as Philosopher. (Library of Philosophy.) New York: Macmillan Co. 1930. 287 pp. \$4.00.

Nicolson, Marjorie Hope: Conway Letters. The Correspondence of Anne, Viscountess Conway, Henry More, and their friends, 1642–1684. Collected from manuscript sources and edited with a biographical account. New Haven: Yale University Press. 1930. xxvii + 517 pp. \$6.00.

#### NOTES AND NEWS

The JOURNAL has received the following communication from the secretary of the Philosophy Club concerning the death of Professor de Laguna of Bryn Mawr:

"In the death of Professor Theodore de Laguna of Bryn Mawr College the Philosophy Club of New York suffered an irreparable loss. The papers which he read at our meetings were not only scholarly and original, but illuminating and delightful. In discussion his fairness and generosity to opponents were remarkable, the more remarkable because of the intensity of his own convictions. There was in him a rare vibrant and poetic quality that is seldom combined with powers of abstract analysis. The sadness of our loss is alleviated by the memory of what we have gained in widom and inspiration from the spirit of our friend."

A series of four lectures on the Ichabod Spencer Foundation will be given at Union College, Schenectady, N. Y., November 7, 8, 21, and 22, by Professor Frederick J. E. Woodbridge on the subject "The Philosophy of Aristotle." The titles of the individual lectures are as follows: (1) Preliminaries with a Note on the Logic; (2) The History of the Soul; (3) Physics and Metaphysics; (4) The Life of Reason.

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res he of There is no similar journal in the field of scientific philosophy. It is issued fortnightly and permits the quick publication of short contributions, prompt reviews, and timely discussions. The contents of the last six issues are as follows:

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Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 18. August 28, 1930.

Human Nature and Social Economy. II. Rexford G. Tugwell.

Limitations. A. A. Merrill.

Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 19. September 11, 1930.

The Method of Deduction and its Limitations. Marvin Farber.

The Definition of Yellow and of Good. Donald Cary Williams.

Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 20. September 25, 1930.

An Analysis of the Experience of Time. V. J. McGill.

An Alleged Escape from the Paradox of Judgment. J. Loewenberg.

Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 21. October 9, 1930.

The Place of Definition in Religious Experience.

EDWIN EWART AUBREY.

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# THE JOURNAL OF PHILOSOPHY

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### THE JOURNAL OF PHILOSOPHY

THE DIALECTICAL ARGUMENT AGAINST ABSOLUTE SIMULTANEITY. II 1

2. We shall now provisionally disregard the considerations hitherto set down in criticism of Einstein's argument, and assume that simultaneity-at-a-place and simultaneity-at-a-distance may and must be actually different relations, and therefore need to be defined in different terms. What, then, is the precise nature of the logical procedure in which Einstein is engaging, when he frames his definition of the latter term? Is he arbitrarily making up a new complex concept "out of his own head," subject to no objective requirement except that the result shall not be self-contradictory? Or is he assuming that there is a relational concept, or category, of distant-simultaneity, which is already employed by all men, and which his definition merely makes explicit? Our judgment of the significance of the ulterior argument to the relativity of such simultaneity will depend partly upon the answers to these questions. A proof that a notion of which we have all of us been habitually making use is what I shall call "respective" in its import, and therefore capable, without contradiction, of being both affirmed and denied of the same subjects of discourse, may be a highly important logical discovery; but the artificial construction of a definition of a term so that the "relativity" of the thing defined follows from the definition may be nothing more than a private—and not at all difficult—exercise of ingenuity, of no importance either for factual science or for philosophy.

Now if we closely scrutinize Einstein's procedure while he is putting together his definition of distant-simultaneity, we find, I think, that the definition is not quite wholly of the one kind nor wholly of the other, though, in his own conception of it, it is mainly a free or arbitrary definition—a verbal and not (as some of his interpreters suppose) a "real" proposition. In three points, two implied, one explicit, it is not arbitrary. It is assumed that the term to be defined must designate a relation between events and, of course, one that can conceivably subsist between them; and that this is something distinguishable from the purely spatial relations of course, and direction between the events in question. These are the restrictions on his freedom of definition which Einstein tacitly implies; and, of course, he expressly accepts the restrictions of the gen-

<sup>&</sup>lt;sup>1</sup>Concluded from article in preceding issue, No. 23.

eral experimental theory of meaning. In his own words (not, preeral experimental theory sumably, to be taken quite literally), "there is only one demand to be made of the definition of simultaneity, namely, that it must supply us with an empirical decision as to whether or not the conception that has to be defined is fulfilled." 2

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But if these are the only antecedent limitations to one's freedom of definition, in the present case, why should Einstein's be regarded as the definition of distant-simultaneity, all others being spurious? Obviously it can not be so regarded unless he shows that his definition is the only one which conforms, or can conform, to these requirements, and specifically to the one which alone he makes explicit, viz. the last. But Einstein offers no reason whatever for supposing that no "empirical definition" except his own is possible; and in fact many others are manifestly conceivable. One such, for example, has been pointed out by M. André Metz in his vigorous and able defense of the theory of relativity against its critics. It would suggests M. Metz, be an equally "empirical" definition "if one substituted the term 'sound' for 'light' in the formula'; if, that is, one said: "Any two distant events are simultaneous, if sound-signals from the points where they occur reach jointly a mid-point between them occupied by an observer." This would assuredly seem to common sense, as it does to M. Metz,3 a wrong definition, because the propagation of sound is by them supposed to be already known, in advance of the definition, to be not isotropic; but this objection arises only because both M. Metz and common sense assume an already given "natural concept of simultaneity," the fulfilment of which would not be shown by the joint-arrival of the signals at the mid-point M unless their velocities over the distances A-M and B-Mwere known to be uniform and their times of transit over these distances therefore equal. In other words, common sense, supposing itself to be already well acquainted with what is meant and implied by "simultaneity-at-a-distance," finds therein reasons for holding that light-signals are at least more serviceable than sound-signals as means to inferring, from a given point, whether two events remote from that point did or did not occur simultaneously. But Einstein accepts no such ready-made a priori conception; his definition is, at this stage of his procedure, not yet reached; and it is not because he already known already knows, or can even meaningfully assume, that light is isotropic and sound is not that he defines simultaneity in terms of the joint-arrival of light rather than of sound-signals at the point.

This he is himself a sound-signals at the point who This he is himself careful to point out. He imagines a critic who raises the objection to the contract of the raises the objection that his definition presupposes a previous knowledge of the fact that it is a definition presupposes a previous in equal edge of the fact that light always traverses equal distances in equal

<sup>2</sup> Relativity, etc., p. 27.

<sup>3</sup> Metz, La Relativité etc., 1923, pp. 21, 224.

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that "an examination of this supposition would be possible only if we already had at our disposal the means of measuring time"; and that it would therefore "appear as though we were moving here in a logical circle." But Einstein replies that his "definition assumes absolutely nothing about light. . . . That light requires the same time to traverse" the two paths "is in reality neither a supposition nor a hypothesis about the physical nature of light, but a stipulation which I can make of my own free will in order arrive at a definition of simultaneity." What this presumably means is that the proposition about the time required for light to traverse the two equal paths is verbal, not factual; the meaning of the term "equal-times-of-transit" is by arbitrary definition to be "times-occupied-by-any-two-light-rays-in-passing-from-two-points-to-\*midpoint-between-them." In short, in order to avoid circularity in his definition, Einstein finds it necessary, not merely to define "simultaneity" itself arbitrarily, but also to define arbitrarily one of the terms entering into the former definition. In a theory containing the "stipulation" Einstein mentions, no question of experimental fact could ever arise as to whether light traverses equal distances with respect to a given reference-body in equal times; to ask such a question would imply some other sense of "equal times" than that specified in the definition of that term. This, be it incidentally remarked, is a somewhat odd consequence of the attempt to arrive at a rigorously experimental concept of simultaneity.

We are to understand, then, that Einstein's definition of simultaneity-at-a-distance is, and is by its author intended to be, one adopted "of his own free will"—subject only to "the one demand," or at most the three demands, already mentioned. It is arbitrary not only in that it rejects the conceivable "empirical" alternative mentioned by Metz, but also in that it rejects the indeterminately numerous other definitions which might be framed in conformity with these requirements. The subsequent argument to the relativity of simultaneity is relevant, therefore, only to the particular sense of simultaneity which Einstein has arbitrarily created by definition. It is evident that he has realized that—if "simultaneity" is not an andefinable logical primitive, having, however, necessary or a priori connections with certain other concepts—the definition of it must hevitably be either circular or arbitrary. Of these alternatives, he determined to avoid circularity, and therefore frankly accepts the other horn of the dilemma. It does not follow from this that the argument to relativity is not valid, for the defined sense of simultaneity, nor yet, necessarily, that the conclusion of the argument is nor yet, necessarily, that the conclusion of the important; but that it is important—that, indeed, it is anything more that hore than tautological—requires to be shown. To this question we shall shortly return. Meanwhile, the supposition of most expounders of the Special Theory, that Einstein has proved the relativity of simultaneity in general—or that his "simultaneity" is something more than a logical artefact—must manifestly be given up.

3. The arbitrary character of the definition becomes further apparent when we note that two alternative "stipulations" were equally possible with respect to one relevant point not hitherto made explicit. Two events at A and B are, we are told, to be considered simultaneous if light-signals emitted from those points at the instants when the events occur there reach simultaneously an observer midway between A and B. But when must the observer be midway between them? Is it sufficient that he shall have been at the midpoint before the light reached it, or is it required that he shall be still in that position, with respect to A and B, when either signal (or both) shall arrive at the point of observation? Einstein's answer to this is, of course, evident. The criterion of simultaneity or non-simultaneity is so defined by him that if the two observers (or their recording instruments) have been at the midpoint at a time previous to the arrival there of either signal, then they are both applying the same criterion, even though one of them is no longer at that point. To make quite sure that there may be no mistake about this, let me quote Einstein's own expression of the crucial part of the argument. He is using the familiar illustration of the train moving along a railway track, and is asking whether "two events (e.g., two strokes of lightning at A and B) which are simultaneous with reference to the railway embankment are also simultaneous relative to the train"; and he is to show "that the answer must be in the negative." The points A and B at which the lightning strikes the embankment are assumed to "correspond to"—which apparently means, to be virtually coincident with—"positions A' and B' on the train." "Let M' be the mid-point of the distance A'-B' on the travelling train. Just when the flashes of lightning occur (as judged from the embankment), this point M' naturally coincides with the point M, i.e., the mid-point on the embankment, but it moves towards the right with the velocity of the train. If an observer sitting in the position M' in the train did not possess this velocity, he would remain A and Bwould remain permanently at M, and the light rays from A and Bwould reach him simultaneously, i.e., they would meet just where he is situated. No. is situated. Now in reality (considered with reference to the railway embankment) he is hastening towards the beam of light coming from B, whilst he is a significant towards the beam of light coming from B, whilst he is riding on ahead of the beam of light coming from A. Observers of light coming on ahead of the beam of light coming from A. from A. Observers who take the railway train as their reference body must therefore body must therefore come to the conclusion that the lightning flash B took place earlier the B took place earlier than the lightning flash A. We thus arrive at

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the important result: Events which are simultaneous with reference to the embankment are not simultaneous, with respect to the train, and vice versa (relativity of simultaneity.)" Now this "important result" follows only if the same test of simultaneity or non-simultaneity is applied by both observers, and only if it makes no difference to the applicability of that test that the observer in the train has not "remained permanently at M," while the observer on the embankment has done so. But it was not necessary to formulate the test—and therefore the definition—of simultaneity or its opposite in this way. It would have been equally possible to say: The events at A and B are to be considered simultaneous if the light-signals from them arrive together at a point which is midway between A and B at the moment of their arrival; and the separateness of the moments of arrival of the signals at the position of an observer who has been but no longer is midway between A and B is not to be considered evidence of the non-simultaneity of the events.

If the criterion had been formulated in the second way, the "relativity" of simultaneity would not have followed. The observer on the train would in that case simply say: "These signals reach me separately; but since I am not now midway between A and B, that fact does not show that the events at A and B were not simultaneous." Not only would this alternative definition be equally possible, but it would obviously accord, as the other does not, with our "natural" idea of simultaneity: i.e., it would express the implications, with respect to events at a distance, of that fundamental concept which we empirically acquire through the experience of simultaneity at a place. The only reason for preferring the first statement of the criterion to the second is that from it only can the relativity of simultaneity be proved. The logical Procedure is that of choosing arbitrarily that definition of the crucial term in the argument which will permit the conclusion desired to be drawn.

Possibly it will be said in reply to this that the second statement of the criterion of simultaneity would not meet the requirement that a definition of that concept must "enable us to decide by experiment whether or not" two events, e.g., the lightning strokes, "occurred simultaneously." The observer on the moving system, e.g., the train, must make his measurements on his own system. When the point M' on that system coincided with M on the other system, the fact known to him was that he was midway between A' and B', the points on his system which "corresponded" to A and B on the other. And he is still, when the first signal reaches him, midway between A' and B', consequently, from his standpoint, he is still midway between the sources of the signals. But this reply would be "Relativity, 1920, p. 31.

unconvincing. For, in the first place, it is not necessary to suppose that the observer on the train is unaware that he is moving relatively to the embankment in the direction A-B; and if he is aware of this, he knows that if A and B were equidistant from M' when M'and M were coincident, they can no longer be equidistant from M after that point has moved from the position of M (which is still midway between them), towards B. He has therefore sensible means of determining that the requirements of the second criterion are not, for him, fulfilled; which means, not that he will judge the two events to be non-simultaneous, but that he will not (so far as this evidence goes) judge them to be simultaneous. If he also knows that the signals do arrive at M simultaneously, he will judge that the events were simultaneous. In the second place, if it is still insisted that each observer can have empirical information only about events on his own system, what follows is that the signals will arrive simultaneously both at M and M', and that both observes will consequently reach the same conclusion, namely, that the events reported by the signals were simultaneous. For, once more, upon the present assumption, all that the man on the train could have known when his point M' in fact coincided with M was that he was midway, not between A and B, since these were not points on his system, but between A' and B' on his system; and the lightning strokes about the simultaneity of which he would have to judge would occur at A' and B', not at A and B. But signals from A' and B' must reach M' simultaneously, since, upon the principles of relativity physics and the apparent evidence of the Michelson-Morley experiment, the velocity of light is constant over equal distances on any given system, irrespective of its relative motion. The consequence that both observers would judge the events about which they judged to be simultaneous would hold, whichever criterion of distant-simultaneity were adopted, so long as it was assumed that each was judging only about events happening on his own system at places equidistant from a midpoint determined on that system. But in this case the two observers would not in fact be judging about the same pair of events; the one would be judging about events occurring at 4 and B. ring at A and B, the other about events occurring at A' and B'. Hence, if their conclusions did disagree in the case supposed (though they would not), the fact would have no significance, since the two observers would be talking about different things. Finally, the assurantions on the assurptions on these matters actually made by Einstein himself, in formulating his own statement of the criterion of distant-simultaneity, are that the tancity, are that the observer on the train as well as the one on the embankment is judgice. embankment is judging about events occurring at A and B, i.e., at points on the embant points on the embankment; that at a moment before the signals

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arrived, M' was coincident with M, and was then midway between A and B; that it ceased to be midway between them before any signals reached it; and that because of this actual displacement, relatively to the embankment, the signal from A reached M' later than that from B. Now these suppositions are either of an empirically verifiable nature or they are not. If they are not, they have no meaning, according to the radically experimental theory of meaning. and it is therefore not permissible for Einstein to use them in formulating his definition. If they are so verifiable, they may legitimately be used by the observer on the train, in arriving at his conclusion about the simultaneity of the two events. But if they may be so used by him, there can be no objection, from the standpoint of the experimental theory, to adopting the second formulation of the test of simultaneity and non-simultaneity instead of the first; for they are the only presuppositions required to make that formulation intelligible and legitimate.

4. One may go farther than this in justification of the proposed alternative definition of the criterion of distant-simultaneity. strictness, it alone, and not Einstein's definition, makes it possible for both observers to have the same concept of simultaneity and therefore to judge of the same matter. For simultaneity is to be defined in terms of an experimental test; and the same test is not applied unless the relevant experimental conditions are the same, at the time when the experiments are actually performed. The experiment here in question is that of determining the togetherness or non-togetherness of the arrival of the beams of light at a point equidistant from their sources. Now, when is this experiment performed by the observer on the train? Not, obviously, before either beam reaches him. But, by hypothesis, before either reaches him he is no longer at the same distance from the light-sources as the observer on the embankment. But this distance is one of the relevant experimental The two therefore do not perform the same experiment; and therefore they are not judging about simultaneity in the If, under these circumstances, the one declares that the two events are simultaneous and the other that they are not, the discrepancy between their conclusions does not prove the relativity of simultaneity; it only proves that they are talking at cross-purposes. The fact that two observers disagree concerning the simultaneity of Pair of distant events, when one of them uses as the definition or the criterion of that attribute the joint-arrival of light-rays pat a point midway between their sources at the moment of their arrival, and the other uses as his criterion their joint-arrival at a point not midway between their sources at that moment, is no more significant than than would be a disagreement between two illiterate persons over

the question whether a whale is a fish, when one of them meant by "fish" any free-swimming animal that lives in the water and the other meant gill-breathing and cold-blooded animals.

5. Let us, however, assume that both observers are using the same criterion, and that this requires merely the initial coincidence of M and M'—i.e., requires that the observers be equidistant from A and Bat a moment before the light reaches either of them. Even so, the conclusion drawn does not follow. For that conclusion is general it asserts the relativity of simultaneity, and therefore of time-intervals, to any state of relative motion between systems. But the argument (aside from any other difficulties) shows this only for a special class of cases, namely, those exemplified by Einstein's illustration of the train and the embankment, in which the motion of the two systems is parallel, or at all events not perpendicular. It is, however, possible to suppose that the positions of the observers at a given instant coincide at M, but that the subsequent uniform rectilinear movement of S' is along a line perpendicular to S at M. In this case, though S and S' will be in relative motion, the two light-rays from A and B should (according to Einstein's assumptions in the present argument) reach the observer on S' jointly, and therefore he, as well as the observer on S, will judge them to be simultaneous. Thus, even if all other objections to the argument are waived, it would clearly be insufficient to justify the wholesale relativization of time which is inferred from it.

6. It was apparently, as we have seen, in order to avoid circularity in his definition that Einstein chose the alternative of making it a "free" or arbitrary definition. Let us now ask whether he has in fact completely succeeded in avoiding circularity. Does he not presuppose certain meanings of both "simultaneity" and "time of an event," "in order to arrive at" his own definitions of those terms; and—what is more curious—are not these tacitly presupposed meanings at variance with those in the formulation of which he employs them? These questions, I think, must be answered in the affirmative. tive. For though he makes the time of transit of the light-rays over the paths A-M and B-M equal by "stipulation," i.e., by pure definition, the stipulation relates only to the equality and not to the notion of "time of transit" itself. That we already know what is meant by saying that a duration elapses during the transit of light over one or the other path, he seems quietly to assume; but in doing so, he also assumes that we are already familiar with concepts which would cepts which would ordinarily be expressed by the distinction between "simultaneity" and "non-simultaneity." To put the matter in another way: in "stipulating" that the times of transit of light from A to M and for from A to M and from B to M shall by definition be equal, stein is applying the stein is applying the quantitative predicate of equality to something

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which, in order to be capable of having that predicate, must be assumed to possess number or magnitude, and this something is, explicitly, "time." He is, therefore, "begging" the idea of timeinterval, before defining simultaneity. But the idea of time-interval and still more obviously, that of motion during a time-interval contains that of succession, in which is implicit the distinction between successiveness and non-successiveness, i.e., simultaneity, of events. And this distinction is not that between simultaneity and successiveness at a place; if it were, it would be inapplicable to the concept of motion, i.e., of successive occupancy of a series of increasingly distant places. It appears impossible for Einstein to formulate his definition of simultaneity-at-a-distance without first accepting both the meaningfulness and the truth of the law of the finite velocity of light, which itself presupposes that the meaning of smultaneity and non-simultaneity-at-a-distance is already known. His so-called "definition" of time is in terms of relative motion, which, plainly, already contains the idea of time and of the two characteristic types of temporal relation.5

7. It seems evident, finally, that Einstein himself does not adhere to the relativistic conclusion which he has deduced in this questionable way from his definition, and that he can not do so without vitiating the rest of his argument. For, after he has ascribed to each moving system a "time" of its own, in which events simultaneous on any other such systems are of differing date, he continues to speak of periods of time during which the two systems are in motion with respect to each other, and during which, also, some determinable number of events is occurring on each. While such and such things are happening on S, we are told, such and such other things are happening on S'. Now this sort of proposition can have no meaning if there is no common duration with a common measure, to which the motion of both systems with respect to one another, and the two series of events, are referred. You can not say that while S moves to the right S' moves to the left, if there are in reality simply

Substantially the same point has been neatly put by La Rosa in an article which I have come upon since writing the above. After quoting Einstein's remark that he merely "stipulates" that the time of transit over the laths A-M and B-M shall be equal, La Rosa asks: "But how does it happen that this free choice finds its free manifestation only when it chooses as point of observation exactly the point M, midway between A and B, rather than any other Point? Perhaps because it is more natural and convenient to suppose that the light takes the same time to traverse the two paths. But what pense can be given to the words 'the same time' when we do not possess the notion of contemporaneity indispensable for the measurement of time? And how, further, can it be that in the necessary choice of M as point of observation, the implicit? But what sense is to be given to the word 'velocity,' when we have not yet arrived at the notion of time?" (Scientia, Vol. 34, p. 297).

two distinct "whiles," one definable solely with reference to S and the other solely with reference to S'; for in that case, you will have isolated the two systems so completely from one another that the relation called "motion" can no longer be conceived to subsist between There must, in short, be a common "while" between any two systems of which relative motion is asserted. But if there is a community of "whiles" there must also be a community of "whens." unless motion, change, and time-lapse are assumed to be discontinuous. All changes in relative position or otherwise, asserted with respect to S, must be in one-to-one correspondence with some events in S'; otherwise there would be intervals during which there was motion and time-lapse for one system, but not for the other-which would be a contradiction, since the motion is reciprocal and therefore never predicable of the one at any instant when it is not predicable of the other. The assumption of this common time is not less necessary even if (in accordance with another portion of the Special Theory) the "time" on S' is said to be "slower" or more "dilated," than that on S. This can only mean that, between two of the instants identical for both, fewer physical changes of a given kind-e.g., complete revolutions of the hands of a clock-occur on the one system than on the other. The very expression of the relativity of clock-times is impossible without the presupposition of an inclusive duration of which the measure is the same for both reference-bodies and is therefore independent of their relative motion. To say literally and exclusively that a given "reference-body has its own particular time" is simply to deny that it is in motion at all with respect to any actual external system.

This argument of Einstein's, then, seems to be one more example of a type of phenomenon familiar enough to the student of the history of philosophy; it is another case in which the very premise which is unheeded and even denied may, by the attentive ear, be

heard the while softly murmuring

When me they fly, I am the wings.

The whole of the Special Theory, in spite of its ostensible conclusion, is pervaded by the assumption that, in Whitehead's phrase, "an instantaneous and ins instantaneous event is nothing else than an instantaneous and simultaneous spread of the assumption that, in Whitehead's philadeline instantaneous and simultaneous spread of the assumption that, in Whitehead's philadeline instantaneous and simultaneous spread of the assumption that, in Whitehead's philadeline instantaneous event is nothing else than an instantaneous and simultaneous spread of the assumption that, in Whitehead's philadeline is not assumption that the assumption is not assumption is not assumption to the assumption is not assumption is not assumption is not assumption is not assumption in the assumption is not assumption is not assumption in the assumption is not assu taneous spread of the universe." We arrive, in fine, by a different road, at the conclusion road, at the conclusion already expressed by Bergson: nous prétendons que le m dons que le Temps unique subsiste dans l'hypothèse d'Einstein à l'état pure: il reste l'état pure; il reste ce qu'il a toujours été pour le sens commun. ARTHUR O. LOVEJOY.

JOHNS HOPKINS UNIVERSITY.

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<sup>&</sup>quot;1'étendue indépendante de la durée," a matter with which the present paper is not concerned.

#### THE ADJECTIVAL THEORY OF MATTER

WHITEHEAD and Russell have advanced theories of nature in which matter is described as which matter is described as essentially qualitative. description applies to molecular and atomic processes as well as to those properties that are immediately observed. Physical entities are defined as adjectives of events. Whereas the description readily applies to immediately observed objects, the question at once arises as to what could be understood by its application to unobserved processes.

The answer to this question to be considered by this paper is the one derived from the special and general theories of relativity. There are problems connected with the special and general theories as descriptions of actual physical conditions, which these theories do not themselves solve. To these problems the adjectival theory of matter bears a direct relation. These problems are first, the definition of physical motion, particularly kinetic atomic processes; secordly, the relation between metrical properties of the geometrical continuum and matter in the general theory. The relativity of coordinates and the relation between the geometry of the continuum and physical properties leave motion, as a property inseparable from atomic theory, untouched. It is the question of atomic motion that reappears.

The theories that Russell and Whitehead provide as answers to these problems possess definite physical results. They involve the rejection of the kinetic-atomic theory of physical process, and the physical significance of the special and general theories, so that the law of gravitation of Einstein can not be a description of actual physical conditions.

In the following discussion three main points may accordingly be noted. First, the definitions of motion and the relation to kinetic-atomic processes in the special theory and general theory, secondly, the principles of the adjectival theory of matter dealing with the questions of atomic motion, and, lastly, the basis for retaining the special and general theories.

I

The definitions of the special theory are based on the physical principles of Newtonian mechanics. Motion for non-accelerated bodies is a relation of masses. Whereas on the principle of relativity is a relation of masses. tivity in classical mechanics there is no physical condition for referring such motion to space, absolute spatial and temporal coördinates or a space of the space hates existed in theory for such motion. Physical motion could al-Ways in the last analysis be referred to space. With the removal of privileged coördinates by the physical definition of space and time

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e of aper in the special theory it follows that there is no meaning to physical motion referred to space; it is essentially a relation of masses, Space and time are relations between physical objects and uniform motion appears as a function of space and time coördinates attached to such objects. If space and time are relations among physical objects geometrical coördinates must be defined in physical terms. Also, what is equally important, the relativity of these coordinates, position and simultaneity, must depend upon the relations of physical objects.

This is quite plain. But it also follows that if there are no coördinates apart from physical objects, the laws of geometry describing physical conditions from Galilean frames are the laws of the relations of bodies at relative rest. Physical laws describing electromagnetic as well as molar phenomena, are then expressible in terms

of the geometrical coördinates of these systems.

If the geometrical coordinates of space and time and the laws of geometry are the relations of physical masses, space and time should be defined in physical terms. In the special theory space and time are defined physically by measuring rods and clocks located on such masses at rest with respect to each other. The simultaneity of spatially separated events for the same frame is given by synchronized clocks. To give these temporal relations a physical meaning, the synchronization of clocks in turn is defined in terms of the equality of "time" taken by a light ray to pass from one clock to the other and return. The details of these definitions are unimportant here; the only factor to be noticed is that the velocity of light plays no part, but only the physical fact that the velocity is constant in vacuo. If the actual velocity of light were a factor, temporal coördinates would already have been introduced. Light is only a physical constant of motion, whose character is exactly known.

It is clear that the principles and definitions of the special theory apply directly only to molar masses. The relativity of space and time coördinates and their definition in terms of measurement take into account primarily the physical conditions of immediately ob-

served masses.

Empirical evidence, however, that can not be ignored, indicates the existence of kinetic-atomic properties, exemplified by the motions of molecules, atoms, and electrons. The classic instance is found in the Brownian movement. On a consistent application of the principle of relativity these physical processes must be defined as the relations of the as the relations of the moving particles. They will then appear as functions of coördinates referred to the particles. They will then appeare thus defined as relative. The coördinates of molar bodies will not logicdefined as relative. ally serve to define this property. The knowledge concerning the natu of SU macr force those I

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<sup>1</sup> Perrin "Atoms."

nature of matter indicates that they are independent of the existence of such masses. If a distinction such as that of Lorentz, between macroscopic and microscopic properties, is significant, reasoning forces one to regard the properties of the former as dependent upon those of the latter.

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In practice, and even in theory, kinetic-atomic processes are still referred to space, independent of any relations of physical objects.<sup>2</sup> This procedure is, however, inconsistent with the special theory, although the transformation equations of the latter continue to be employed. But the presence of such equations can be legitimate only if spatial coördinates are relative. The appearance of space as a referent amounts to a revival of coördinates and laws of geometry independent of physical objects, that is, to absolute space and time.

Now the reasons that kinetic-atomic processes are still defined in this manner deserve attention. The reason is that the kineticatomic theory of these processes can not be deduced from the definitions and principle of relative motion in the special theory. If the former are retained, conditions inconsistent with those imposed by the latter then appear. The kinetic-atomic theory as a description of actual conditions describes a physical property that is independent of a choice of reference systems. These conditions are not then essentially definable in terms involving a choice of such systems. This situation unavoidably exists if the following conditions hold. The theory requires that kinetic-atomic properties of matter are integral factors in physical changes. This means that atomic motion is physically important, as, for example, in the evolution and processes of stellar bodies. This will not be the case if they depend upon an arbitrary choice of axes, since, in principle, what is motion can equally well be defined as rest. Also, if matter is intrinsically kinematic, a condition inseparable from atomic theory itself, physical motion occurs throughout physical nature apart from axes referred to any physical body. There are no other axes. ditions can not, however, be derived from the definition of these processes in terms of reference systems, and space and time coordinates supplied by special theory. The special theory and the meaning for coordinates that it provides are, on the other hand, based on clear and precise physical considerations.

If empirical evidence, such as the work of Perrin and Einstein, indicates the validity of the kinetic-atomic theory, an unsatisfactory state of affairs thus arises. This is increased by the fact that the physical basis of relativity in the special theory includes processes. Physical bodies and their motions are among the

<sup>&</sup>lt;sup>2</sup> Cf. Jeans's Astronomy and Cosmogony, pp. 107-113.
<sup>8</sup> Cf. Meyerson, La Déduction Relativiste, pp. 61-62.

The definition of such properties in terms of relaprimary facts. tive spatial coördinates does not provide the kinetic-atomic theory, and their definition in terms of space itself is inconsistent with the special theory.

II 1

The above situation is employed by Russell as evidence for the adjectival theory of matter. The evidence is derived from quantum theory. If the periodic processes usually appearing in quantum theory involve relative motion, the processes depend upon the choice of certain axes. But the emission and absorption of light by an atom do not seem to depend upon systems of reference. Accordingly, Russell defines periodicity as a series of qualities of events. serial structure of events, which with respect to coordinates would be an orbit of motion, provides the determinate meaning for periodicity. The formal structure of events may be expressed as a physical law, and the law, for coördinates, may be interpreted as the law of motion. It is plain that the intrinsic structure and the qualities of events are not coordinate properties.4 If the argument is valid, it must hold universally, applying to all physical processes. Events and their structures, rather than physical motion, are the conditions of physical changes.

It is, however, also clear that this result involves the rejection of the physical validity of the special and general theories. etry of the continuum is not defined by actual physical conditions. This appears obvious with regard to the general theory. also indicates that the validity of the kinetic-atomic theory of physical processes is implicated in the physical basis of the latter. The law of gravitation and a variable Riemannian metric is not, according to Russell, a description of a physical state of affairs. The general theory must accordingly be rejected or retained only as a logical and mathematically convenient system. Russell accepts the second alternative.5

2

A consideration of the relation of the special and general theories will aid in establishing this point. It will also lead to the theory of Whitehead.

If the principle of relativity is to be generalized so that physical so the investigations, laws are to be invariant for non-Galilean as well as Galilean systems, space and time must lose the immediate physical significance awarded them in the special the them in the special theory. The appearance of a non-Euclidean geometry here is not a matter of simplicity or convenience.

5 The Analysis of Matter, pp. 29-80.

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<sup>4</sup> Russell, The Analysis of Matter, pp. 344, 348, 359.

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led an The laws of geometry in the special theory prescribe a uniform metric. The situation is not accidental. It is the consequence of two conditions. There is the principle of the uniformity of motion for Galilean frames. The laws of the geometry of coördinates of these systems prescribe a uniform metric. The metric will be invariant for any system. This uniformity may also be derived from the definition of space and time coördinates. If space and time relations are defined in terms of physical measurement the spatiotemporal differences of the coördinates of any two systems will also be expressed by measurement. Physically they will be defined by measuring rods and clocks located in either system. Since measurement involves a metric, this expression of coördinate differences involves uniformity. It postulates that the geometrical structure is independent of the particular relations of any two Galilean systems. Only the measured lengths vary.

A Euclidean uniformity does not, however, hold for the coördinate differences of stationary and rotating systems. If non-inert systems are admitted, a non-Euclidean metric must also be admitted. From this situation it follows that the geometrical laws describing the relations of objects lose the direct physical significance found in measurement. Space and time lose their direct objectivity.

These deductions can not be avoided. If, on the other hand, the principles from which they follow here are to be retained, other physical conditions than the relations of measuring rods and clocks must define the actual geometry of the continuum. The geometrical character should give the laws of moving bodies, the behavior of bodies as moving in fields of force.

The fact of the equivalence of inertial and gravitational masses indicates the new physical basis required. The postulate of the physical equivalence of inertial and accelerated systems suggests that the presence of a non-Euclidean metric relative to a system, as in the case of a rotating system, may be taken physically as the presence of a gravitational field relative to the system. The geometry of the coördinates of the system will then be related to the deviations of the motions, at points of space and time, of bodies from uniformity relative to the system. The existence of inertial forces of every character is, accordingly, not the consequence of absolute accelerations, but the relations and distributions of masses. Thus the laws of geometry describing the behavior of physical masses for any system do not exist independently of actual physical conditions. The relativity of coördinates in the special theory has been carried

This is only the simple fact that measurements made from a rotating system will be subject to the transformation equations in the direction of rotation. The relation between the diameter and circumference of a circle does to obey the rules of Euclidean geometry.

still further. The metrical character of coördinates for any reference system is determined by physical entities.

If the relation between the laws of geometry and the physical motions of bodies is to be determinate, a precise relation must exist between the physical quantities defining a physical field and the geometrical quantities defining a metrical field for a reference system. And what is equally plain, if the physical laws of moving matter are to escape the particular conditions of measurement imposed by a coördinate system, the relation between the geometrical and physical quantities must be defined independently of any reference system. They will then be invariant for any transformation of coördinates. Any physical system will be equally valid for describing physical conditions.

Whereas for Galilean coördinate systems, the law of the behavior of bodies was the law of uniform motion for any change of Galilean systems, for systems moving arbitrarily with respect to each other. the law becomes that, for any systems, bodies move in geodetic lines. All laws of motion thus appear as a generalized law of inertia, obtaining for any reference system. It follows that Euclidean geometry, which restricted the law to bodies at relative rest or moving uniformly, must also be generalized. The generalization should apply to the motions of bodies for any arbitrary system. Only on this basis does it follow that there are no inertial masses relative to space, but only relative to each other. The geometrical procedure of the There are, howgeneral theory is too well known to be repeated. ever, certain salient points that must be mentioned. Gaussian coördinates are the geometrical components whose specific values, varying continuously from point to point, determine the They define the measured values with respect to the coordinates. kind of a geometry that appears, without which measurement is impossible. Thus no geometry is possible without the determination of the g's at every point, i.e., there can be no coordinates apart from their specific values. It is then these g's of a coordinate system which will possess a physical basis, related to the physical conditions for that system. Laws defining the values of the g's, and accordingly the materials. ingly the metric for the system, will be the laws of the motions of bodies relative to the system, will be the laws of the merged, merged through the fact that the actual values of the geometrical variables are defined by actual physical conditions, these in turnodetermining the behavior of bodies. The values of the g's at every point may be taken as the gravitational potentials of the physical field at every physical field at every point as measured with respect to that system.

The relation between the gravitational potentials of the physical field at every point as measured with respect to that system. The relation between the potentials and the geometry thus reduces to an identity. The man identity. The measuring relations of the coördinates are the phyan identity. sical field relative to the system.

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Since the geometrical components may vary with a change of coordinate systems, to be invariant general physical laws must assume
a form independent of the specific values of the g's. The law of
motion must accordingly be defined independently of these values,
that is, of the conditions of any reference system. The g's of Gaussian coördinates form the components of a metrical tensor. In a
four-dimensional continuum this tensor possesses ten components,
so that there are values of ten g's at every point required to determine measuring relations. By purely mathematical procedure, from
this tensor, another tensor, a curvature tensor, may be derived.
This second tensor is completely independent of any coördinate system; as a scalor quantity, it will therefore be invariant for any transformation of coördinates, that is, for any variation of the g's.

If the values of the components of a metric are defined by physical properties, there must be ten physical components defining a physical field for any system. There is the physical tensor or matter-energy, which possesses ten separate components. These components determine, for any system, such physical quantities as density, stress, momentum, and kinetic energy. They therefore are the physical quantities determining a gravitational field for the system. The physical tensor is also independent of coördinate systems. Whereas the Newtonian law of gravitation possessed only one component, the new law of gravitation possesses ten; and gives a more complete description of a gravitational field.

The essence of the general theory consists accordingly in establishing a relation between these two tensors. Since the tensors are independent of coördinates, the law of motion then assumes a form invariant for any transformation of coördinates and for systems of reference moving arbitrarily with respect to each other. The law of motion is the equation expressing the identity of the curvature tensor and matter tensor at every point. The equation is the equation for geodesics of moving bodies; and by defining them independently of any system, it determines them for any transformation of coördinates. Thus what physically is the transition from one reference system to another moving arbitrarily with respect to each other, appears geometrically as a transition from one Gaussian coördinate system to some other Gaussian system.

As the law of gravitation, however, the equation states that "the metrical character (curvature) of the four dimensional space-time continuum is defined at every point by the matter at that point and the state of that matter." The motions of masses and their attendant physical effects are determined by the actual distribution and state of matter in the universe.

<sup>&</sup>lt;sup>7</sup> Einstein, The Principle of Relativity, p. 183.

The special theory with Euclidean coördinates appears as a special case. For a system of reference with respect to which the physical components vanish, the g's become constant. Motion accordingly becomes uniform, and the transformation of coördinates occurs according to the rules of the special theory. These conditions can not, however, be obtained by any transformation, since the deviation of motion from uniformity is determined by conditions independent of coördinates. And in the general theory, as in the special, since there are no measuring relations apart from specific values of the g's for a given system of reference, there is no meaning to coördinates except those referred to physical objects.

3

At this point two considerations of particular importance may be noted. The first is that the motion of matter is not the relation of bodies to space-time. This conclusion depends upon the fact that a consistent application of the principle of relativity defines motion as a relation of physical objects. It is not space-time, but physical masses that determine the motion of bodies. In other words, there are no inertial forces relative to a continuum, but only relative to each other. The law of gravitation as the definition of space-time in terms of matter is the law of these relations in a form invariant for any system. World-lines or geodesics of moving bodies defined independently of any system are accordingly only relations of physical objects, not independent existences as spatial paths in Newtonian absolute space. They are not physical entities exercising physical effects. It is a necessary consequence of the special and general theories that the continuum considered in itself is not a physical existent. This result emerges clearly if one considers its geometrical character. Geodesics as measured paths of moving bodies are relative, like the specific values determining the measuring relations. As metrical elements they are inherent in coördinates. And it is plain that if motion is defined as the relation of physical objects the relation of physical objects. jects, there is no physical meaning to a geometrical path, independent of specific coördinates, that is not a relation of physical entities. The continuum is neither intrinsically Riemannian or Euclidean, but as a metrical continuum it is relative in the same sense as the gravitational potentials are relative. What Einstein perceived was that the Newtonian law of gravitation was in a physical sense relative. That is, it is tive, that is, it has no meaning apart from the relation of masses to each other. The difficulty was that this physical relativity was stated in terms of an absolute geometry.

These considerations possess a direct bearing on the point made in the special theory. The question of kinetic-atomic processes re-

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mains here as in the former. They can not be defined with respect to space-time any more than with respect to space. They are the relations of physical entities, where there is no meaning to coördinates except those referred to physical masses. This emerges more clearly in the general than in the special theory, since the geometry of the coördinates, as well as position and simultaneity, are functions of physical relations.

This leads to the second consideration, the objection of Whitehead to the general theory. The objection that Whitehead brings against the general theory is that it provides no foundations for measurement. If the general theory is valid, the laws of geometry prescribing the conditions for measurement depend upon variable properties. The actual metric will vary with a change of reference system, and might vary even for the same system. The essential point of the objection is clear. The metric for any reference system is determined by actual physical conditions and not by any given intrinsic laws of geometry. Physical measurement, however, involves rules of measurement. Otherwise there is no foundation for distinguishing between "exact" and "inexact" measurements, and for correcting practical errors. Where the metrical structure is defined by variable conditions, there is no means of determining the geometry for a frame without presupposed measurements. This situation arises where in theory all physical properties are defined as functions of coördinates. To meet the requirement, the theory of Whitehead contains a systematic and uniform geometry independent of actual physical objects.8 The existing structure of space-time is independent of matter.

Whitehead's objection corresponds to an actual situation. In practice the laws of direct measurement employed are Euclidean rather than those of a variable metric identifiable with a physical field. This is the situation in astronomy and in the majority of physical observations. Obviously these rules are not prescribed by the general theory. What is required is rules of exact measurement which are not in principle subject to variation or defined by variable physical properties. Their application in immediate observation does not reveal discrepancies capable of rendering them obviously impossible. Moreover, as Whitehead states, the application of the laws of a uniform geometry must be based on some property in direct observation, where measurement occurs.

One other point, however, must be noticed. The general theory does not necessarily involve a fatal logical circle. The situation is this: given the physical conditions independent of the coördinates of any system and the metrical field for that system is also given.

<sup>&</sup>lt;sup>8</sup> Whitehead, The Principle of Relativity, pp. 58-59. Process and Reality, pp. 506-507.

The actual motions of physical masses are among the primary data. The fact that the physical conditions can be determined only by measurement from a system does not require that the rules employed in measurement be the metrical structure describing the motions of bodies. All that is physically required to render measurement possible is a uniformity, not the laws of a particular metric. Such an approximate uniformity is supplied by the immediately observed conditions under which direct measurement occurs. The question of measurement, however, is too complicated a matter to be treated in detail here.

#### III

The theory advanced by Whitehead is an alternative to the special and general theories of relativity. As an alternative it defines motion with respect to space, preserving an important function of space in Newtonian mechanics. Physical motion and its physical effects are not the relation of objects, but the relations of bodies to space. The definition accordingly involves another basis for relativity. If motion is relative, as a change of position it involves a meaning for relativity of position independent of the relations of objects. Because motion may be defined in this manner the theory provides the usual account of kinetic-atomic processes.

These processes, as is usually supposed, occur in space which is independent of moving particles, and not with respect to coördinates necessarily referred to physical objects. There is therefore a meaning for atomic motion throughout the whole of physical nature independent of any choice of physical objects. An important condition of the atomic theory is thereby fulfilled. And what is equally important, since all motion is defined with reference to space, the inertial effects of rotation involve an interpretation different from that provided by the general theory. The effects defining the presence of rotation will refer to certain spatial axes, not to the actual relations of the rotating body to the distribution and motions of other masses. If physical motion is essentially a relation to space, the law of gravitation must assume a new form. And this fact again indicates that the physical meaning for atomic motion is closely integrated into the special and general theories.

The deviation of such a theory as that of Whitehead from the physical relativity of Einstein clearly emerges in another connection. In order that physical motion be relative there must be a physical meaning for position independent of the relations of physical objects. This means ultimately that the geometry of the continuum is independent of physical entities. The formal properties of the relations of objects and the behavior of bodies will not

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<sup>9</sup> Whitehead, The Principle of Relativity, pp. 87-88.

define the formal geometrical relations. It is in this manner that the theory of Whitehead meets the objection to the basis provided for measurement in the general theory. A geometry of measurement involved in determining physical conditions is defined independently of these conditions.10 It is, on the other hand, necessary that the law of gravitation of Einstein must be rejected. There are no variable conditions from which to derive a variable geometry imposed by the law of Einstein. If space-time is independent of variable physical conditions, geometrical uniformity would appear to be essential. When one considers that the geometrical structure is a purely formal structure, it is perceived that a variability of this structure postulates a variation of the external conditions. In itself it is only the formal properties of a set of relations and these are not intrinsically variable. Therefore, if Whitehead's theory is valid, the law of gravitation can not appear as a generalized law of inertia, and the equation for physical motion will not be the equation for geodesics.

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If the consequences of absolute space and time coördinates are to be avoided, all motion must be relative. The kinetic-atomic theory of physical processes can not, accordingly, be valid. dynamical character of matter is not an intrinsic condition of physical changes, since this property as a physical occurrence must be defined with respect to certain spatial coördinates.11 Thus, if space is legitimately to serve as the referent for motion, the kinetic-atomic theory must be rejected. The difficulty regarding the use of space has always been that space, as a geometrical field, was always taken as a physical existent. But inasmuch as a pure geometry is only the formal properties of relations, either these properties are those of relations of physical masses or some other non-geometrical physical object. If the former obtains, then the geometrical laws describe the relations of moving bodies, the general theory of Einstein results, and there is no physical meaning of motion in terms of space. If the latter is the case, a theory such as that of Whitehead follows, and physical properties, such as motion, lose their importance for a geometry describing physical conditions. other words, motion has lost its physical significance, and the kinetic-atomic theory its ultimate validity.

The physical importance of the adjectival theory of matter here appears. That matter is adjectival or qualitative evidently means

This appears in another manner. If space-time is independent of matter, molecular as well as molar phenomena, the metrical character may be given in direct experience. It may appear in direct measurement, so that there exists a direct and verifiable meaning for the geometry involved, say, in the determination of astronomical distances.

There is also the additional fact, quite important, that the relativity of obrdinates is independent of physical motion.

that the structure of space-time is independent of physical properties, i.e., the relative motion of physical objects. It is in this respect that molecules and atoms are like immediately observed sense qualities, as, in some sense, they must be, if their description possesses meaning. They must be definably like particular colors and sounds. The identity consists in the relation which matter and sense qualities bear to the actual measuring relations. It is an apparent fact, and the basis of all measurements and coördinate descriptions, that the metrical laws of space and time relations of sense qualities are independent of the intrinsic qualitative nature of these terms. It is this fact to which the physicist appeals in the employment of rules of measurement not given by the general theory. As obvious and simple as the fact appears to be, it appears to compose the essential meaning of an adjectival theory of matter.

#### IV

The objection to Whitehead's theory, apart from the fact that it requires the rejection of the general theory, is that coördinate systems in practice as well as in theory are physical objects. Physical measurements are made with physical instruments from molar bodies. This is one important reason why space and time are relations among physical objects. The relativity of measurements then involves the physical states of these systems. In Whitehead's theory, coördinate systems must be different "spaces," giving the independent physical meaning to the relativity of position, and the physical laws must, therefore, assume a form invariant for different spaces, rather than physical states. Without entering into the great merit of Whitehead's theory and definition of different spaces, which provide coordinates, an important objection that appears here is precisely that urged against Newtonian absolute space. Whether a body is moving or at relative rest and the physical effects accompanying such states, can only be ascertained by observation or measurement from physical objects, not from the relation of a physical object to a "space." Coördinate systems in practice involve physical objects, rather than spaces, a condition that appears to be unaccountable if motion necessarily entailed a physical meaning for position independent of such entities. This consideration appears to be as primary as, for example, the fact that in the determination of actual physical conditions by direct measurement, geometrical laws are employed which, in theory, are independent of these conditions. If coördinate sys-

12 This is one important physical fact that makes measurement possible. Yet it also raises the question as to the relations of physical objects that provide the formal properties of the geometrical relations. The formal structures of sense qualities do not appear to be sufficient for physical measurement.

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tems are physical entities with assignable physical states, this means that the relativity of position, and hence coördinates, as a physical condition divorced from physical masses and their relations, will not ultimately serve.

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On the other hand, if the special and general theories are regarded as descriptions of physical conditions, as the above situation requires, the problem concerning the kinetic-atomic processes remain. They can not consistently be referred to space. The kinetic-atomic theory also involves physical motion independent of a choice of system of reference, since it can not be derived from definitions in terms of such systems. There is only one conclusion consistent with this result. Kinetic-atomic processes are not essentially functions of space and time coördinates, i.e., they are not relative properties. The processes are changes of relations among physical constituents independent of any reference system. The principle of relativity applies fundamentally only to the molar level.

The result is entirely consistent with the fact that there are no privileged coördinates, and that any system of reference is equally valid for describing physical conditions. And it does not affect coördinate descriptions. The motion of a particle can always be measured by a suitable choice of coördinates. It must also be the case that any motion that is not essentially a function of coördinates will not appear for a selected system, since the relativity of coördinates removes the possibility of this appearance. This, however, is a principle entirely different from that which states that all physical properties are essentially definable only as directly measured or directly measurable properties, that is, with respect to coördinates of reference systems.

The latter is by no means certain. It does not appear in statistical and probability calculations, where the results do not involve the coördinate descriptions of the elements of a group. It also does not necessarily appear in such a theory of quanta as that of Heisenberg. It is not that of the general theory, and its rejection is required to meet Whitehead's objection to the circular definition present in rendering the metrical character of space-time dependent on matter. The laws of a particular geometry of measurement must otherwise be regarded as the prior fact. In other words, the mechanics of Descartes, rather than Galileo and Newton, would be final. The special and general theories are developments of the latter, for the essential point of the theories of relativity is that the behavior of bodies is defined in physical, not geometrical, terms.

Whereas, the above conclusion concerning atomic motion af-

fects nothing in practice or method, it possesses definite physical consequences. The general theory and a variable metric need not be rejected or regarded as only logically convenient. It possesses, for instance, all the physical consequences following from the general theory. And, finally, the kinetic-atomic theory remains valid, a condition, to repeat, which has been inseparable from atomic theory itself.

F. P. Hoskyn.

YALE UNIVERSITY.

### BOOK REVIEWS

Les Théories de l'Induction et de l'Expérimentation. André La-LANDE. Paris: Boivin & Cie. 1929. Pp. vi + 287.

This contribution to the neglected history of logic by the scholarly editor of the *Vocabulaire technique et critique de la philosophie* will be welcomed by students especially interested in tracing the development of experimental and inductive methods in the philosophy of science.

The experimental method has been treated in the past by writers of three sorts: (1) scientists primarily like Archimedes, Da Vinci, Galileo, Huyghens, Newton, Hooke, Herschel, Mach, Claude Bernard; (2) scientists who were also philosophers reflective over their technique, e.g., Descartes, Pascal, Boyle, Leibniz, C. S. Peirce; (3) philosophers primarily who ventured theories on scientific method, e.g., Plato, Francis Bacon, Hobbes, Hume, Kant, Reid, Whewell, Comte, J. S. Mill. Lalande's own work would fall in the last class.

Besides the discussion of historical theories of experimentation which occupies two-thirds of Lalande's lectures as they were given in 1921–22, the last third of the book is concerned with the logical principles and metaphysical foundations of induction, including an appendix treating of contributions since 1921 by Brunschvieg, Lachelier, J. M. Keynes, Nicod's criticisms of Keynes, Dorolle, and Bachelard.

The great number of authors cited—not all of whom have been given above—shows the author's encyclopedic mastery of the documents. One may question M. Lalande's defence of Bacon's theory of inductio per enumerationem simplicem, but one can not accuse M. Lalande of not being thoroughly familiar with the texts of Bacon and of his adversaries.

Other main points discussed are: (1) Aristotle's meaning of induction  $(\epsilon \pi \alpha \gamma \omega \gamma \dot{\eta})$  as the passage from the particular to the general. (2) The inseparability of deduction from induction (p. 13 ff.). (3) The rise of the modern experimental tradition from

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the ancient practises of mechanical crafts, magic, alchemy, and astrology, and its rapid growth after the invention of printing. (4) The strife between the British nominalistic tradition and the protagonists of the "hypothetico-deductive" method receives enlightening historical consideration especially with respect to the mutual interrelationships of the conventionally separated "empirical" and "rationalistic" philosophies. Newton's actual use of general hypotheses, Descartes' experimental anatomies, Francis Bacon's, Hobbes', and Boyle's high regard for mathematics (as well as Spinoza's physical experiments—not mentioned by Lalande—), are illustrations in point. (5) Whewell's Kantian theories are invoked as important neglected contributions to the logic of induction. (6) John Stuart Mill's Canons are criticized again for their inadequacy as forms of demonstration; also for their restriction of induction to causal sequence. In support of this latter fundamental criticism, Lalande goes back to Bacon's theory of forms. The reviewer thinks he could have done better to refer to Plato and Spinoza, not only incidentally but with greater analysis.

In general, M. Lalande's objective faithfulness to his texts makes him offer only a short reiterated statement of his own analysis concerning the three-fold assimilation of (1) things to things, (2) minds to minds, (3) things to minds. In this suggestive but not elaborated view, all of three major schools of modern philosophy seem to merge, viz., the realists, idealists, and pragmatists, respectively. Further examination of the full implications of these types of logical theory seems to be called for. For instance, M. Lalande seems to favor the modern treatment of induction (since Hume) as a calculus of probabilities without considering the idealistic analysis (cf. Bradley on Modality in his Logic and Cassirer on The Problem of Induction, ch. V. of Substance and Function) which subordinates the calculus of probability to insight into the more general epistemic conditions that determine the form of particular truths.

PHILIP PAUL WIENER.

University of Southern California.

Die Seele und das Ich im homerischen Epos. J. Böнме. Leipzig: Berlin: B. G. Teubner. 1929. vi + 132 pp.

Since Rohde's epoch-making book the current idea among philologists was that the Homeric conception of the afterlift involved the notion of an individual soul which is supposed to be connected with the body during life and lives on freely after death Hades. A thorough investigation mainly from a philological point of view brought some scholars to a quite different conclu-

sion. According to W. F. Otto and to Professor Bickel the Homeric soul has no individuality of its own. Properly speaking it is nothing else than life itself or a kind of vital energy. According to these modern scholars what Rohde and his followers considered as the Homeric "soul" is, strictly considered, a ghost, a Totengeist.

Dr. Böhme's book is an endeavor to find a solution of this problem. He takes it from another point of view which is to me the only right one: he tries to determine the meaning of the words used in the Homeric poems for the psychic activities which usually go under the word "soul." The whole book is nothing less than a very careful inquiry into the meaning of a number of well-known words like  $\phi \rho \epsilon \nu \epsilon s$ ,  $\mu \epsilon \nu o s$ ,  $\theta \nu \mu \delta s$ , etc.

This inquiry leads the author to the conclusion that the current idea that the Homeric words are derived from names of organs is wrong, or at least inadequate:  $\phi \rho \acute{\epsilon} \nu \epsilon s$ ,  $\kappa \rho a \delta \acute{\eta}$ ,  $\kappa \mathring{\eta} \rho$  no doubt point to some organs, but, conversely,  $\theta \nu \mu \acute{o} s$ ,  $\mu \acute{\epsilon} \nu s$ ,  $\nu \acute{o} s$  never had any connection with parts of the human body. Consequently it is impossible to explain these words with materialistic derivations, notwithstanding that bodily and spiritual life are to Homer closely connected. Moreover some of these words involve the idea of the self ( $\nu \acute{o} s$ ), but other words, especially  $\phi \rho \acute{\epsilon} \nu \epsilon s$ , seem to point only to a kind of instrument of the self. Other words like  $\kappa \rho a \delta \acute{\iota} \eta$ ,  $\kappa \mathring{\eta} \rho$ ,  $\mathring{\eta} \tau o \rho$  mean both the self and the instrument of the self. Sometimes the Homeric language seems to allude to a psychic power differentiated from the self which rules over the self.

The conclusion of Dr. Böhme's inquiry is that there is no idea of the oneness of the soul in the Homeric poems. The large number itself of psychological terms makes it clear that to Homer the human soul appeared like a number of differentiated and often opposite activities, without forming a whole. There are, in other words, many souls, each corresponding to a particular complex of emotions. From this point of view the Homeric ideas are perfectly in line with the mentality of primitive tribes. In fact psychic pluralism is one of the most interesting features of primitive mentality.

In my judgment this book is one of the most intelligent contributions to the knowledge of early Greek mentality and of its primitive content.

UNIVERSITY OF VIRGINIA.

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#### NOTES AND NEWS

The first International Congress of Religious Psychology, sponsored by the International Society for Religious Psychology, will be held at Vienna University, May 26–31, 1931. The most important problems of recent religious psychology are to be discussed from various viewpoints (educational, experimental, sociological, psychiatric, pathological, theological, occultistic, etc.), the main subject being the psychological basis of the religious unbelief of our days. Many highly renowned scientists in various countries have promised to deliver lectures or read papers at this Congress.

Opportunities to see the city of Vienna and important institutions will be provided. For programs, accommodations, and other information, send fifty cents in stamps to the President of the International Society for Religious Psychology, Kark Beth, Professor of Protestant Theology in the University of Vienna, address, VII. Zitterhofergasse 8, Vienna, Austria.

Professor E. C. Wilm of Colorado College has accepted an appointment as Acting Professor of Philosophy at Stanford University for the winter and spring quarters of the current academic year.

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Volume XXVII. No. 21. October 9, 1930.

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EDWIN EWART AUBREY.

The Relativity of Inertial Mass. F. P. Hoskyn.

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Volume XXVII. No. 22. October 23, 1930.

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# THE JOURNAL OF PHILOSOPHY

# FURTHER ON GOOD AND ITS STRUCTURE

THE purpose of the present paper is to add a few reflections to the discussion on the definability of "good," renewed in a recent article in this JOURNAL. Like the writer of the article, Mr. Williams, I believe that this question presents a living issue for philosophic thought, and the final answer will be that good is definable. On the other hand he grants too much to the opposing view in shifting the discussion to the definability of yellow and assuming the resemblance of good and yellow as qualities.

For the opposing view one is generally referred to Professor Moore's Principia Ethica, where it is argued that good is a simple unanalyzable quality, like yellow, and can therefore be recognized and pointed out, but not defined. It is conceded, however, that it may be possible to give an account of the indispensable conditions of the presence of the quality; but to identify the quality with its conditions is to commit the Naturalistic Fallacy. Mr. Williams' reply amounts to this, "There is no Naturalistic Fallacy, or, as far as it really matters, the quality (e.g., yellow) is definable by the account of its conditions. The same method may be used in defining good." Though he inclines to it, he does not go the full length of identifying rellow with its physical or physiological correlates; but he argues that the "quale" is only the "raw feel," the "sensuous and unique whole aspect."

It is important to note that definition in this sense is the only lossible kind in dealing with yellow. The other types (following Mr. Johnson) may be disputed here with some justification. They are lot strictly definitions which set out the "what" of a given "that." Ostensive definition only points out the "that." Bi-verbal definition hay be valid in other cases (I believe it is in the case of good), but dealing with yellow we are reduced to giving translations or nonyms. Neither is the synthetic definition of yellow (e.g., by its losition in the colour-pyramid) real definition since it only tells us where to look for the "that," and if it be carried further, it resolves before an account of the conditions of the presence of the quality. Definition per genus et differentiam rarely works in the case of ad-The only sense in which yellow can be defined, if it can, is the account of the indispensable conditions of its appearance.

The Definition of Yellow and of Good'' by Donald Cary Williams, XXVII, pp. 515-527 (Sept. 11, 1930).

This commits the Naturalistic Fallacy, and the dispute is at bottom whether there is such a Fallacy, and if there is, whether it is negli-

gible.

With the answer I am not here concerned. It seems probable that no definite solution can be arrived at, since there is involved the whole problem of mind and body and of primary and secondary qualities. But I am concerned that the answer to the question of the definability of good should not depend on, and await, the solution of these other problems. That it does is implied by the admission that good is a quality like yellow. It carries the whole argument over to another field—the validity of definition involving the Naturalistic Fallacy-where the two opposite positions can be maintained with almost equal claims. In what follows, therefore, it will be argued that whereas yellow can not possibly be defined without committing the Naturalistic Fallacy, (whether this is justifiable or not does not concern us), good can, and therein would lie the real refutation of such a position as that taken up in the Principia Ethica. Mr. Williams himself hints at this very great difference when he says, "It is quite likely that the quality good may prove to be the wholequale of a structure whose significant elements are immediately discernible in experience, so that resort to inexperiencible constituents or correlates will be unnecessary for its definition and analysis. In this sense only are experientially complex qualities more readily analyzable than experientally simple qualities" (p. 523).

Another type of argument for the simplicity and indefinability of the concept of value is the well-known dogma, "Fact is fact and nothing but fact. How then can 'ought' be derived from 'is,' or 'good' from any other qualities or descriptive elements?" In dealing with good, it takes up the position we have already examined. But "oughtness" or "obligation," despite its claimed simplicity, can scarcely be a quality of a situation. The obligation is encumbent on the person in question; its ground lies in the character of the situation. This suggests that the supposed simplicity of a concept such as obligation may be a type of unity not necessarily resulting in indefinability. The concept may be employed to summarize a situation or indicate the unified structure (itself composite) of the situation. Many concepts have this character and therein they differ greatly from those under which we comprehend particular objects or particular activities (e.g., table, house, man, running, speaking). The difference is that situations, not things, are thus comprehended.

William James thought it was a sort of tautology, on being asked why it was dark, if one answered, "because it is night." In a sense he was right; night is a term we use to summarize the various occasions on which darkness prevails. But in a deeper sense he was

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It was not a duplication of entities when the name "night" was given to the whole wider situation which was felt to be responsible for the single fact of darkness. As knowledge advanced night came to mean the period of darkness during which that portion of the earth is turned away from the sun. But even before this was known, the statement, "It is dark, because it is night," signified at least the recognition that the fact of darkness was not a self-dependent, isolated fact, but rested on a wider basis of which it was a manifestation. If now someone were to say, "Night is an indefinable concept; you have not analyzed it by giving the indispensable conditions of its existence," and were at the same time to maintain that it was not equivalent to darkness, he would be multiplying entities. By night we do mean "the period during which, that part of the earth being turned away from the sun, there is darkness." Night is therefore a concept used to summarize a situation, and it was always so used as long as it was distinguished from darkness. The knowledge of this situation has increased; the concept itself, though clarified, has not extended its scope. It remains to note that it does not describe the whole situation in all its particulars. is not concerned with particular time, duration, or place. It summarizes the common structure in such situations, which makes them situations of a certain kind. Such a structure has a unity, but not an indefinable simplicity. To call "night" indefinable in other terms than itself, no one would venture except on the basis of the most vicious abstraction.

For the sake of brevity I shall call such a concept which describes the common structure of various situations a synoptic concept.

Let us consider a second example: "This man lifts great weights because of his strength." If strength is a mere summary of the various acts of a certain kind, which we have seen him perform, then the statement is a tautology. Certainly it means something more; it gives some idea of the structure of his body, of his muscles, the grounds within him of the acts he performs. If we identified strength with muscularity, we would be committing the Naturalistic Fallacy. But we do not. The statement, "he possesses strength" (or "he is strong") does not mean, "He has huge muscles, etc." It is, however, fully explained by saying, "He has huge muscles, etc., which are the grounds of actions of a certain kind." Strength is synoptic concept, describing the common structure in various The man does not possess strength in addition to his muscles, he has a quality added to his bodily frame. He is strong because he has a frame (or mentality) satisfying certain conditions which hay be expressed in other terms than strength.2 The particular sites in the condisituations in which these conditions are apprehended as the condi-

<sup>&</sup>lt;sup>2</sup> The ground may not always be known, e.g., "He is cunning."

tions of actions of a certain type, have a common structure which is expressed in the proposition, "He is strong," and synoptically in the concept of "strength" or "strong."

It might be said that the same account could be given of yellow as of strong. If we took the statement "This is yellow," to mean "waves of a certain kind originating from the object impinge upon my retina," we would be committing the Naturalistic Fallacy. On the other hand, if we took it to mean, "Waves of a certain kind originating from the object impinge upon my retina with the result that I have a certain sensation," we would be doing what corresponds to begging the question, since "having a certain sensation," is exactly what would be meant by "seeing yellow." It was not the same in defining strength. There, "actions of a certain kind" were quite definite in that they could be expressed in other terms than "strong," e.g., lifting heavy weights. Yellow, therefore. can only be defined by committing the Naturalistic Fallacy; otherwise there is at most a precise correlation of physical, physiological, and psychical facts. On the other hand, a synoptic concept, such as "strong," is capable of definition by an account of the structure common to the various situations in which it is found. It may be expressed generally in the proposition "x is strong," or in the conception of "x's strength." The meaning of these, when we do not substitute anything definite for x, gives us the bare structure—an object containing grounds for acts of a definite character (i.e., that common to such acts as lifting great weights, or supporting them, since one might speak of the strength of a table.)

A still better illustration (for it covers a wider field) is the concept of power. The structure of situations giving rise to the statement of power may be expressed in the proposition "x can do X," where x is any thing and X any activity. The structure may therefore be described as "x contains the ground of an activity X, which results, given certain attendant circumstances." A very good example of the synoptic nature of the concept of power is afforded by such a proposition as "I like power," which can only mean when expanded, "I like that the ground of acts of a certain character (i.e., those involving subjection of persons or things) should lie within me, and, given certain conditions (i.e., the exercise of my will) those acts should result."

It is now clear that synoptic concepts can not be explained properly when held in abstraction. They describe situations, or rather, the common structure in situations, and explanation or definition can result only from a consideration of the situations and an expansion of a general or indefinite proposition employing the concept. many adjectives are really synoptic concepts can be seen from the meth of be other

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method in which some dictionaries often explain them as "the quality of being or doing something or other," where that something or other reveals the structure represented by the concept.

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If "goodness" (and good) is, like power or strength, a synoptic concept, it should be possible to describe in other terms the common structure it represents and expand a general proposition employing the conception. What, then, is the structure common to situations in which the judgment of value is made? Or, (which amounts to the same thing) what is the meaning of "x is good."? Is it "x possesses a certain indefinable quality," or "x is such that in given circumstances it acts in a certain way"? No reason can be given for predicating yellowness of a subject, other than perception of the quality. But if one be asked why he calls anything good, he will at once try to give reasons. That man is good because he is courageous, truthful, etc. His goodness is not something he possesses in addition to his courage and truth-telling. There is a certain parallel to this opposition in Berkeley's Essay Towards a New Theory of Vision, where he argues that explanation of what is perceptible can only be in terms of something else that is perceptible, and not of conditions unperceived.

The evidence points towards the conclusion that good is a synoptic concept rather than an indefinable quality. There remains the very difficult task of outlining, however tentatively, the structure it represents which is common to situations from which the judgment of goodness arises. This structure may be best detected in considering the origin of conception. Aristotle got to the root of it in very few words, when he said (De Anima-434 a 8-10) speaking of the power which men have of representing images for deliberation (βουλευτική φαντασία): καὶ ἀνάγκη ἐνὶ μετρεῖν τὸ μεῖζον γὰρ διώκει. ὥστε δύναται ἔν ἐκ πλειόνων φαντασμάτων ποιεῖν. ("It must be measured by one standard; for it is the greater which the reasoning animal pursues. Thus it is able to form one conception out of several images.")

The concept is a concept of several particulars; it is not an abstraction or universalization of one or a few essential qualities or properties of the particulars. It is each of the particulars as it is for thought; it is not in any sense a fixed or static form to which the particulars add details. The concept is thus the standard of the particulars; with respect to it, not as an external, but as an immanent standard, they may be ordered in a series. This is what I think Aristole refers to in  $\tau \partial \mu \epsilon \iota_{\mathcal{G}} o \nu$ . In this sense it might be said that man is the measure of men from scarcely a man to a great man. The same is true of any other concept. (The ordering of this series is often practically impossible due to the complexity of the concept, except for mere approximation by the choice of relatively

arbitrary marks, as in art criticism; theoretically the problem is simply that of the clarification of the concept. The point is that such clarification does involve a declaration of principles on which the series would be ordered.)

In this "more or less" involved in the very nature of a concept, we find the structure of the concept of goodness. In respect to any concept, its "more or less" is its "better or worse." The comparative idea is thus prior to the positive, which is a line marked as a starting-point by any age, relative to its achievements. In the situation indicated by the judgment of goodness there is implied an activity and a subject of the activity and a standard set by the concept of the activity in terms of its own. The variation in men's and peoples' discernment of these terms constitutes the history of dissension about values. This will be of significance when we come to consider how far a science of morality is possible. From what has been said, it follows that one is much more likely to learn about the goodness of man from a study of man's nature, than from a study of goodness.

A subject of the activity, the activity, and a standard set by the concept of the activity in terms of its own-these constitute the structure of the concept of goodness. They are specified or implied in every judgment of goodness. "x is good" therefore means, "x has a greater or less capacity (i.e., a more or less developed capacity) for the activity X." What is a more or less developed capacity depends on the standard which the concept of the activity implies, and can be stated (the more so as knowledge advances) in terms of its own. Where the activity is simple, this account is simple; where the activity is complex (e.g., ruling, the activity of friendship, etc.) there are often distinguished constitutive activities whose harmonious exercise makes up the chief one. And most complex of all is living, the activity of the subject man. It may seem to some extremely artificial to embrace the many-sided life of men in one activity. This, however, is the implication of the judgments we make about individual men, that they are good or evil. A man is good, not by the possession of some indefinable quality, but by possessing the ground of activity of some kind; and the particular activity is good not in virtue of some indefinable quality, but in virtue either of its position in the series ordered by the concept of that activity, or of the part it plays in some wider activity which it partially constitutes.

The latter case brings us to the conception of "good for." For example, in the proposition, "Walking is good," the implication is "good for man," and the subject and activity in the situation with

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<sup>3</sup> Of degree, not necessarily quantity; utilitarianism is an example of an attempt to reduce it entirely to the quantitative.

reference to which "good" is used, are "man" and "living" (not "walking"). The proposition means ultimately, "Walking aids the development and exercise of man's capacity for living." Or, if it is not carried so far, it may mean merely, "Walking is good for the health," which, when expanded in terms of the structure, becomes, "Walking aids the development and exercise of man's capacity for physical life (or living)."

It is obvious that "good for" and "a good to," which on some views are dismissed from a discussion of goodness as merely synonyms for "useful," involve the same conceptual structure as "good." The employment of the same word may perhaps be considered some evidence in favor of the above analysis. Fresh difficulties arise in a detailed consideration of propositions containing "right" and "obligation," in relation to those containing "good." To follow this up would narrow the field; goodness must be explained in all its contexts, not only in the so-called moral judgments, and there seems to me to be a justifiable initial prejudice in favor of a view which would relate the so-called moral and non-moral uses of "good" as against a view which refuses to acknowledge any community in the two concepts. A thorough examination of the problem would require a new Principia Ethica. For the present it is sufficient to point out that it is a corollary of the position outlined above that moral and non-moral good do not differ in kind, but only in the greater complexity of the activity implied by the former.

Further difficulties would follow from the consideration of propositions of so-called intrinsic or absolute goodness, e.g., "It is good to be a man," or "God is good." Each requires detailed treatment. We may but suggest that a consideration of context will show the first to be a judgment not about an absolute quality of a man, but (if it has any meaning, and is not an ejaculation of delight) about man's place in the animal world. The second is a judgment, not of an indefinable quality in God, but rather of God as the ground for a world of a particular kind, most likely a rational world. This is very well illustrated in Plato's arguments on the goodness of

God in book two of the Republic.

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Though the difficulties may be great enough to compel serious modification in our outline of the conceptual structure of good, two points must be stressed as demonstrated: first, whatever prove to be the correct outline, it will be an interpretation in terms of activity, not of quality; secondly, the method employed to correct and improve the outline will remain the same, viz., the search for a conceptual structure on the assumption that good is a synoptic concept. This is also the method by which the investigation should be pushed into the investigation should be pushed in the investigation should be pushed into the investigation should be pushed into the investigation should be pushed in the investigation of the investigation should be pushed in the investigation of the investigatio into the field of morals proper, and the meaning of "right" and "obligation" determined.

It would be well to add a few words on the "science of morality" to which many look forward with fond hopes. Mr. Williams, for example, says, "The science of color can teach us how to make things yellow (for instance). The science of morality will make a solid and admirable contribution when it can teach us how to make things good" (pp. 522-523). On the basis of the structure outlined above there can be, strictly speaking, no special science of morality; it may be the sum of all the sciences on their practical side. One would have thought that Plato's arguments are enough to end such hopes. To become a good doctor, one studies medicine, not morality; to make good shoes one studies shoe-making, not goodness. To learn how to make a child good, it is true, one might study the "science of morality" and then apply it. But this science would consist either of a body of rules dealing with the nature of men and children and their tendencies (in which case it would not be a science of morality), or of a few general rules, such as to preserve the mean in everything. Aristotle's attempt to found such a "science of morality" and his failure at precision in it, is instructive. There can be no science of the good because it has no specific subject-matter. That is in part what Plato meant by the unique position he assigned to the form of the good. We have seen its generality to lie in its intimate association with the very act of conception.

The only possible meaning, therefore, for the "science of morality" is the "study of man," and in this sense Aristotle thought it was politics. Our age would include politics, economics, sociology, psychology, and especially biology—and perhaps all the other sciences as well, in as far as they have any influence on practical life.

A. EDEL.

NEW YORK CITY.

### BOOK REVIEWS

Pastures of Wonder. The Realm of Mathematics and the Realm of Science. Cassius Jackson Keyser. New York: Columbia University Press. 1929. xii + 208 pp.

When one thinks about the formal analysis of thought one wonders how the world keeps going. For, under the influence of the analysis, there is a tendency to visualize the edifice of reason as a kind of madhouse in which half the people rush about earnestly assuming one another if only you make the assumption that A = B, you may prove to a dead certainty that A = B, while the other half is engaged in reasoning that if you observe a piece of wood you may conclude, with many reservations and for all practical purposes, that you observe a piece of wood. One is almost driven to think that

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the genuine triumphs of thought must have consisted in a kind of defiance of logic, in some illegitimate loyalty to unwarranted deductions, in some affaire de coeur with empirical generalizations based on really insufficient evidence. It is hard to say whether logic is mad or the world is mad, but certainly the same kind of sanity is not easily found in both.

It is not Professor Keyser's book itself which touches off the foregoing sentiments so much as a consideration of those fields into which the subject-matter of the book, upon analysis, leads. *Pastures of Wonder* is a remarkably clear and concise treatment of those matters with which it is explicitly concerned.

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It is concerned with "The Realm of Mathematics" and "The Realm of Science" and the purpose is to "report" a certain definition of mathematics and to "propose" a certain definition of science. These definitions are rendered in terms of the kind of proposition which either type of thought is interested in establishing.

Mathematics is defined as that reasoning which is "hypotheticodeductive" in character—its aim is to establish hypothetical propositions. An hypothetical proposition is not merely one which has the "if—then" form, because wholly empirical propositions devoid of any deductive relation may be put in that form: "If you pray for me, then I will pray for you." A genuinely hypothetical proposition must be able to take the form, p implies q, in which q has not merely the status of an empirical consequence of p, but is logically deducible from it. Why? Otherwise, the concept of hypothetical proposition, and its complement, categorical proposition, would not serve to distinguish the two greatly different realms of truth—the truth of a correct deduction and the truth of a correct observation. These two senses of the word "truth" have such an utterly different significance that our distinction as between propositions should be made to correspond to them.

A mathematical proposition is, therefore, a proposition which is true or false in the deductive sense, and a scientific proposition should be recognized as one that is true or false in the empirical sense.

A number of important conclusions with regard to the nature of mathematical thinking follow from this position. It is seen that a mathematical proposition, as such, always asserts the relation of implication (which is described as logical deducibility, but is described no further) between one proposition or a certain set of propositions and another proposition. The bare statement: "The square on the hypotenuse of a right-angled triangle is equal to the sum of the squares on the other two sides" is not a mathematical proposition and is not mathematically true. What is mathematical is the proposition that that proposition may be deduced from other propo-

sitions, called axioms and postulates in Euclid's geometry. What is mathematically true is not the concluding proposition, but that the deduction of the latter from the former is correct. Mathematics is concerned only whether p does imply q. It is not concerned, as mathematics, with whether p is true or q is true.

This position, as far as it goes, seems perfectly sound. Any single proposition in what has been traditionally called mathematics. asserted in isolation, has no kind of truth whatever. It would certainly have no empirical truth because of the way mathematical entities, with which such a proposition deals, are defined. They are defined precisely in that way which will place them beyond reach of the empirical. Empirically they have no status. In geometry, for instance, the conclusions concern figures made up of lines of length and no width. It is impossible to observe or experiment upon these figures, and the same is true of the subject-matter of all branches of mathematics. One may come to conclusions about such entities, but not to empirical conclusions. Moreover, a "theorem" in traditional mathematics, such as the one about the square on the hypotenuse, is not true until proved true. The only way in which it can be proved true is to deduce it from other propositions—in other words, to show that a implies b. Whether a is or is not an empirical proposition makes no difference. Whether a is or is not empirically true makes no difference.

Pursuing our conclusions further, we see that mathematics is not limited to considerations of numbers, lines, planes and the like, nor is it limited to any one type of subject-matter. It is apparent that correct deductions may be made as between propositions of any content whatever or of no content whatever beyond meaningless symbols. One may say, taking for granted such intervening steps as are logically necessary:

1. That a straight line is the shortest distance between two points implies that the sum of two sides of a triangle is greater than the third side.

2. That all flubjubs are dingbats implies that some dingbats are flubjubs.

3. That John has a sister Mary implies that Mary has a brother John.

4. That a cow is an elephant and an elephant is a bird implies that a cow is a bird.

As stated, 1, 2, 3, and 4 are mathematical propositions the truth of which no one can doubt because they all assert correct implication. The two latter propositions happen to involve empirical content. In 3 the stated content seems to be true empirically. It is to be supposed that there are plenty of Johns who have sisters Mary, who

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in turn have brothers John. In 4 the empirical content is false. We know that cows are neither elephants nor birds. 2 has no content meaningful in the empirical sense because in that sense flubjubs and dingbats are nothing. 1 has terms suggestive of empirical content, but in reality they are emptied of such by the Euclidean definitions of line and triangle. In short, 1, 2, 3, and 4 are all true in the hypothetico-deductive sense, although as among the constituent propositions between which each asserts implication, some are empirical and others are not, and some of those which are empirical are true while others are false. The mathematics in every case lies in the deduction.

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If all the four propositions cited are mathematical, what is the relation between what we are used to calling mathematics, an instance of which is proposition 1 and the kind of thinking exemplified in 2, 3, and 4, which seems to have nothing to do with mathematics. Both, says Professor Keyser, are applications of mathematical thinking. The distinction we should make is not between "pure" mathematics in the traditional sense and applied mathematics, but between "sheer" mathematics and mathematical applications. Sheer mathematics is a consideration of the logical relations themselves, form without content, asserted in terms or symbols such as p and q which denote nothing in particular. Mathematical applications are the same forms into which some empirical content has been introduced, such as brother, sister, cow, bird, or terms suggestive of actual content, such as line, point, triangle.

Thus mathematics is a consideration of forms involving no particular kind of subject-matter and applicable to any just because mathematical truth never means to say that some isolated proposition is correct, but that a certain proposition may be deduced from another or a group of others. Such truth depends wholly on the form of propositions or the form which is taken by the relation between propositions, and not at all on their content. In reality, mathematics has to do, not alone with the world of actuality, but with that larger world of which actuality is a part—the world of possibility.

The treatment of "The Realm of Science" complements this analysis. Whereas mathematics deals in a certain way with the world of possibility, science limits itself, in a different sort of dealing, to the world of actuality. Science is concerned with establishing categorical propositions—that a is so or that b is so. Science in the science is concerned with establishing categorical propositions—that a is so or that b is so. Science in the science is not seen any means, process, or instrumentality by which categorical propositions are established. Professor Keyser notes that one such means, continually helpful, but never conclusive, is logical deduction itself, as when a scientist says, or gets a mathe-

matician to say—if this proposition is true, certain observable consequences must follow. If he observes all the deduced consequences to follow, his hypothesis is substantiated by so much. In this and in other ways mathematics constantly enters into science, by suggesting where science might look for something. But deducing q from p and looking for q are profoundly different operations. It is therefore proposed to define science as a body of categorical propositions, or in the sense of an enterprise, as an attempt to establish categorical propositions.

It is beyond doubt, as Professor Keyser points out, that science stands badly in need of a clear and explicit definition. The variety of contradictory senses in which the term is seriously used, often to pronounce judgment on the most ultimate issues, is a disgrace to the intellectual world and a golden opportunity for clever advertisers, propagandists, what not. When one considers the conceptions of science entertained by the public at large, and the terrible power of those conceptions, deciding matters ranging from a choice of tooth-paste to the status of almighty God, together with the black confusion and rank muddle of them, one is actually filled with a despairing and melting sense of pity that such things should be.

In relation to the main theme of this very small book—it numbers two hundred pages of large type and generous spacing—various matters are touched upon briefly and pointedly: the rôle of definition, the place of undefined terms, the concept of a logically perfect language, and the like. The whole thing is done in a lively and humane manner, with a minimum of technicality and very clearly. In fact, so clear is the book in what it does treat that it had the effect of raising in my mind the question whether a book may not be too clear, as tending to make unnecessary that mental activity on the part of the reader which is a condition of comprehension. But this is too deep a matter for the present review.

Every now and again the author carries forward his treatment by means of a dialogue between himself and the reader, between himself and a scientist or some such character as a means of ironing out difficult points. The book has a deal of sharpened individuality about it which holds interest. I have assigned it in two of my courses in general philosophy as, all things considered, the most pointed introduction to an analytic consideration of physical science and mathematics. The results seemed to me to be good.

Difficulties arise not so much from within the actual limits of the book as from matters into which it leads, but does not discuss. One instance is the division of all possible propositions into two types the hypothetical and the categorical. Bluntly, does this not leave a moral proposition without any status whatever? I mean a state-

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ment of the form, men should not steal. Such a statement would seem to fulfill the conditions necessary to make it a proposition without fitting naturally into either one of the all-inclusive types.

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Whether or not the preceding point is minor, the following is certainly major. Professor Keyser's discussion at almost every point turns upon the distinction between empirical truth and mathematical truth, the former limiting itself to the actual, the latter unlimited except by the possible. It is necessary to make and see this distinction, Professor Keyser maintains, because a scientific or categorical proposition can be verified only by means of observation and experiment, while a mathematical proposition simply asserts logical deducibility, and has nothing whatever to do with empirical verification.

But how is a hypothetico-deductive proposition verified? How do we know, when we assert a relation of implication, that the assertion is a correct one? Consider the following proposition in "sheer" mathematics: That (1) all a's are b's, and that (2) all b's are c's imply that (3) all a's are c's. Let us take Professor Keyser's advice, examine the familiar as if it were strange, and ask ourselves what warrant we have for saying it is true that (1) and (2) imply (3). Suppose someone said that the implication or deduction was a false one or that he doubted it. It would do no good to supply more primitive logical principles, as that a can not be both b and not b, because such principles only supply more propositions from which to make the deduction, and it is deducibility itself which is under discussion.

The question is, what is our warrant for considering any deduction, however primitive, to be correct, to have any truth, not to say any meaning, status, relevancy. To verify an empirical proposition we must at least go outside the proposition itself. When I assert, it is true that I have written the letter a, the proposition may be verified by observation of what I have written. Now one may suggest with point that the verification of a hypothetico-deductive proposition is ultimately a matter of the same kind of evidence. We have our warrant for saying it is true that all a's are c's if all a's are b's and all b's are c's from our continuous and impressive experience of the fact, and it is difficult to see that we have it from any other quarter. It is a condition of the world (of actuality) that when an a is a b and a b is a c, the a is a c. For instance, when I hold in my hand a pencil, and the pencil is composed of wood and graphite then I hold in my hand something composed of wood and graphite. is the kind of world we live in. When a person with whom you are talking has a name, and his name is Humperdinck, then it always happens that you are talking with Humperdinck. Suppose this was

not true of the actual world. Suppose at a certain instant in which you held a pencil, that the pencil was composed of wood and graphite, and during the same instant you found you were not holding something composed of wood and graphite—I would lay a wager that every logician in that kind of world would declare it false that the proposition a is c follows by implication from the propositions a is b and b is c.

A logician of our own world may retort that it is possible to show correct deduction as between propositions themselves patently false in the empirical sense, as in the instance: If a cow is an elephant, and an elephant is a bird, then a cow is a bird. Again, why does the logician feel sure that this constitutes correct reasoning? Is it not because it always occurs in his experience that when the cow in the pasture is the quadruped in the pasture, and the quadruped in the pasture is grazing, the cow in the pasture is grazing. This is the sort of thing that experience always affirms and never denies. not because of our continuous functioning in such situations that we feel no hesitation in affirming that if a cow were an elephant, and an elephant were a bird, then a cow would be a bird. If our experience denied such principles and did not affirm them, our logic would probably be framed accordingly. If anyone doubts this, let him ask himself why he considers it more true to deduce a is c from the propositions a is b and b is c, than to deduce from them, a is not c. The same considerations would naturally apply to every form of deduction or implication.

To make this point is not to deny that there are distinctions between mathematical thinking and empirical thinking. But if the point is sound it reveals a common ground between them, basic in nature, of the presence of which no intimation can be gained from Professor Keyser's discussion. Moreover, to carry the point one step further, we would have to modify considerably the relation between the conceptions of actuality and possibility as they are developed in the book. The patterns of possibility would be seen, in every instance, as drawn from actuality, and instead of the actual world being a part of the possible world (from the propositional point of view) any correct judgments about logical relations in the possible world would ultimately rest on evidence taken from the actual world.

Indeed, if we would be strictly honest in talking about the world of possibility, how do we know but that the possible a which is the possible b (the possible b being the possible b) is not anything but the possible b. In any case, if the rules for making possibility judgments are construed as different from the rules for making actuality judgments, how will we ever know the right rules from the wrong

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author Hereat rules, or a correct judgment from an incorrect one when we are dealing with that infinity of alternatives, the possible world.

So precise is Professor Keyser's treatment of what is explicit in the book that one feels in the course of such criticism as I have suggested that he would have left no room for doubt had he seen fit to extend the scope of his volume to include, however briefly, some consideration of these underlying issues.

JOHN SOMERVILLE.

COLLEGE OF THE CITY OF NEW YORK.

Storia della Filosofia Italiana dal Genovesi al Galluppi. Giovanni Gentile. 2d ed. Milan: Fratelli Treves. 1930. 2 vols. xv + 272 pp.; 260 pp.

The group of philosophers treated in these two volumes are neither well known nor very influential out of their own country. Sig. Gentile has preferred to clarify a small period in the history of Italian philosophy rather than to sketch an epoch of greater proportions. As a consequence his book, though of importance for an understanding of early nineteenth-century thought in the Kingdom of Naples, has no decided bearing on the future development of European philosophies as a whole.

The group of thinkers includes Genovesi (1712–1769), Delfico (1744–1835 or 1836), Lauberg (1752 or 1753–1834), Borrelli (1782–1849), Bozzelli (1786–1864), and Galluppi 1770–1846), terminating in a coda on a practically forgotten figure, Ottavio Colecchi (1773–1847), who was the great opponent of Galluppi and apparently the master of the new "Hegelian" Italian school. As a whole these men occupy in Italian thought—at least in that of Naples—the same transitional position as that of the Idéologues in France.

One of the most noticeable characteristics of this period is the way in which its development parallels that of French thought. As Ideology may be said to develop from Condillac—although the name was invented, I believe, by Destutt de Tracy—who in turn was

<sup>1</sup> The issues mentioned were discussed orally with Professor Keyser, who maintained (if I may set this down from memory):

1. That a moral proposition is always a product of experience and is therefore categorical.

2. That the basic principles of logic (such as the law of identity) are necessary to the having of what we call experience—not "products" of experience.

3. If our life were not made up of such experience, our logic would not sanction such principles.

An appendix contains some unpublished writings of Colecchi, about the authorship of which there is, however, some discussion. See Vol. II, 171, n.l. Hereafter the book reviewed will be referred to in parentheses by volume and page without title.

more or less inspired by Locke, so this group of philosophers finds in Locke's problem of the origin of human ideas and the certainty and extent of true knowledge its central problem. And just as in France the problem of finding some sanction for believing in the mind's "activity" became dominant after the close of the eighteenth century, so in Italy it was not long before philosophers became dissatisfied with a mind that was at the mercy of mechanical motions and sensory stimulations and sought some way of freeing it and investing it with spontaneity. The seeds of the revolt in France were in Destutt de Tracy himself—in the theory of "resistance," which grew into Maine de Biran's theory of "effort." In Italy we find the same seeds in Borrelli, a pupil and friend of Delfico, who (somewhat inconsistently) insists upon the radical difference between sensation and judgment and the "activity" of the judging mind (I, 205).

This prerogative of the mind takes on more importance in Bozzelli, who was more interested in ethics than his contemporary. In spite of his friendship for Destutt de Tracy and the praise he received from him, he insists upon the "soul's" activity, which decomposes its affections and sensations and recomposes them (I, 249). This forza intrinseca dell' anima is not equally strong in all individuals and at all ages-there is an echo of Cabanis here-and hence the acts of all mortals are not alike. But we are all always active and not entirely passive. In Galluppi this need of "activity" becomes so strong that in spite of his repugnance for Kant (II, 58)whom he seems to have known from the expositions of Villers, Kinker, and Degérando-he develops an epistemology which Sig. Gentile is willing to call pure Kantianism (II, 65).3 In Colecchi the active subject is a punto indivisibile (II, 172) which impresses its "notions" of space and time upon experience, which contains within itself the source of the ideas of "substance" and of "cause," which in turn "serve as a basis for all knowledge which comes from experience" (II, 178). One can easily see with Sig. Gentile how Colecchi serves as a link between the Hegelianism of De Sanctis and Spaventa and the main Neopolitan tradition (II, 216).

The historian of philosophy who thinks wholely in terms of logic will not ask himself why both the thinkers of France and Italy were dissatisfied with the mind's "passivity." If the premises of sensationalism were true, and the reasoning valid, then the conclusions

<sup>2</sup> Cf., I, 227. ''Il pensiero, secondo il Borrelli, è pura attività, all' esplicazione della quale gli stimoli sono semplice occasione.'' The word "occasione" saved the day in his opinion

<sup>3</sup> He seems to have known Kant well enough, however, to have seen the resemblance between the Kantian and the Rousseauistic argument for the subjectivity of relations. See II, 49, n.l. Cf. Miss Gertrude Bussey's "Anticipations of Kant's Refutation of Sensationalism," Phil. Rev. (1922), Vol. XXXI.

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of sensationalism ought to have been acceptable to all who understood it. But the historian who is not shocked at finding social and political (in general non-logical) determinants of the re-orientation of thought, will not be surprised that logic had little influence on the course of philosophy at this time. The reason why sensationalism was acceptable to the French revolutionists was not logical but "ethical"; it gave them a means of combatting the philosophy of the Church and the Monarchy, for it seemed to prove that any man properly educated was as good a judge of true and false, right and wrong, as any other, and that "authority" was unnecessary in life. The reason why this philosophy seemed "deplorable," "the root of the country's misery," to Victor Cousin, a generation or so later, was that it spread scepticism and materialism and destroyed the foundations of true liberty.4 As the Abbé Bautain remarked in 1839, "The man of to-day with moral needs more profound, conscience more enlightened, ideas more vast, views which tend towards the universal, sublime presentiments, burning anxiety—the man of today is no longer [Condillac's] man nor his statue. He no longer recognizes himself in a sensation-machine, in an ideological mannikin, or in a mass organized to feel." 5

Very much the same feeling existed in Italy. The Kingdom of Naples after the French conquest of Italy became a sort of vassal of the French crown. The Bonapartist (and Muratian) régime gave its government the same pseudo-liberal air that the revolutionary government of France enjoyed. After Waterloo and the fall of Murat, a more "respectable" philosophy was needed. Hobbes had shown that one could be a materialist—of a sort—and a royalist, even a legitimist. But to the eighteenth-century mind materialism connoted revolution and as men drew away from revolution they drew away from materialism. Delfico-whom Sig. Gentile calls the link between Genovesi and Borrelli (I, 49)—a good eighteenth-century liberal, anti-clerical and "Philosopher," demands nothing better than the "physical basis" for both ideas and language (I, 46), whence there is to be expected the attainment of "natural perfectibility" (I, 53), giving rise to a universal legislation for all mankind (I, 57).6 Sensationalism gave Delfico all the sanction he needed for his practical ideas and naturally enough he fails to see the difficulties of his basic philosophy. So true is this that while praising Kant for seeing the importance of the problem of educa-

<sup>&</sup>lt;sup>4</sup> See Cousin's Premiers Essais, 3d ed., 1855, p. ix. Cf. his La PhiOsophie sensualiste, pref. to 3d ed., dated 1855, p. ii. I have tried to clarify all this for France in French Philosophies of the Romantic Period.

<sup>&</sup>lt;sup>5</sup> Philosophie-Psychologie Expérimentale, Strasbourg and Paris, 1839, I, xxi.

<sup>6</sup> This was anticipated in Italy, according to Sig. Gentile (I, 59), by Filangieri. It puts Delfico culturally earlier than Montesquieu.

tion, he himself reiterates the sensationalistic dogmas as the premise from which the answer to that problem must be deduced (I, 109).

The plea for activity begins to make itself felt in Borrelli, as we have said above. He is a disciple of Cabanis and an opponent of Descartes, Leibnitz, and Kant, apostles of una filosofia ipotetica o aprioristica (I, 151). But in his desire to be more thoroughly a philosophe, he tries to make a union of ideology and zoology, and finds a way to do it in the theories of Erasmus Darwin (I, 146, 169) and Brown (I, 181). But such theories make a physiological force essential to the human (and infra-human) animal and Borrelli was able thereby to make an agreeable simplification and at the same time to make the mind active. Nor, thought he (I, 224), did he do damage to certain great religious dogmas, for he believed that the activity inherent in the mind provided for all the freedom of choice that morals demanded.

In Bozzelli this activity assumes a major rôle, for Bozzelli believes that man's behavior always envisages a future, not a present end. He argues at great length to that purpose in his Discorso sull' indole del piacere e del dolore (I, 243) and consequently has to prove that the mind is able to anticipate conditions not yet present. If that be so, it is obvious that sensation must be more than a reaction to an object immediately present.

Il senso non è semplice recettività: ei non ha niente di simile a un corpo fisico in riposo che riceva un urto meccanico da un corpo in movimento. L'anima, nell' atto che riceve quel dato stimolo, rispondo all' impressione esterna, facendo nascere la sensazione, cioè "un fenomeno sui generis, che si riferisce all' oggetto esterno, senza pero rassomigliargli e senz' aver nulla di commune con esso" [I 245].

But again no one can assert that this was posited because of a logical flaw in Condillac. On the contrary, a reading of Sig. Gentile's chapter on Bozzelli shows very clearly that, as in so many other cases in the history of philosophy—Bozzelli made an epistemology to fit an ethics.<sup>8</sup>

We have not the space to pursue this inquiry to further length, but I believe it would yield the same results for Galluppi and Colecchi as for their predecessors. Nor is this surprising. Practically all of these men, like their French confrères, took a busy part in the social and political life of their nation. They were men who had to have a philosophy to articulate their lives. Delfico was a famous liberal (I, 129); Lauberg fu detto il primo cospiratore del moderno risorgimento italiano e l'anima di tutto il movimento rivo-

<sup>7</sup> Cf. Destutt de Tracy's Elémens d'Idéologie, An XIII—1804, p. xiii.

8 We have an interesting analogue of this in French philosophy in Maine de Biran, who as early as 1794, wrote that he would like to see how far the soul is active, since to be moral necessitated activity. See Maine de Biran, Sa vie

et ses pensées, pub. by Ernest Naville, 1857, pp. 123, 124.

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luzionario napoletano (I, 120); Borrelli, a famous lawyer, poet, musician, and physician, was imprisoned for his liberal views and exiled (I,132–137); Bozzelli was also a political exile (I, 235), was imprisoned, and held many state offices; Galluppi was another liberal and wrote three or four political pamphlets; Colecchi was a priest and the only member of the group whose entire life was spent in teaching—though Galluppi added a professorship of philosophy to his other occupations. Yet even Colecchi was not without his political affiliations (II, 145).

Such men are seldom great system builders, nor for that matter much interested in the minute questions of philosophy for their own sake. For that reason they are usually forgotten by later generations, as, for instance, Cousin is forgotten. Yet the present reviewer feels a certain admiration for them. They illustrate that welding of abstract thought and practical action which was typical of their time and is still typical of Latin countries. They were shrewd analysers and their moral judgments, because of their daily contact with the world of affairs, have a wisdom which the ethics of our professors seem to lack entirely.

It is evident that in spite of its narrow range Sig. Gentile has written a book which is indispensable to one who would thoroughly know the history of philosophy in the nineteenth century. First published in 1903, this second edition—which forms a part of the complete works now in process of publication—is in its revised and enlarged form a standard text for its period. Not only does it illuminate the internal cultural history of Italy, but also clarifies the spread of French, English, and German ideas into the peninsular. Students of the fortunes of Kantianism and Ideology will find it of great help in their researches and students of British philosophy will find it at least in parts instructive.

GEORGE BOAS.

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## JOURNALS AND NEW BOOKS

THE SYMPOSIUM. Vol. I, No. 4. Belief: I. A. Richards. Poetry and Logic: P. E. Wheelwright. Jules Laforgue: Bonamy Dobrée. Beauty is Truth: J. Middleton Murry. Jazz: C. E. Smith. The Irrational Malady: M. U. Schappes. Paris Letter: Stanislas Fumet.

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### NOTES AND NEWS

We print below the program of the General Meeting for the Reception of the Third Series of the Paul Carus Foundation Lectures held in connection with the Thirty-second Annual Meeting of the Western Division and the Seventh Annual Meeting of the Pacific Division of the American Philosophical Association, at the University of California, December 29–31, 1930.

The Carus Lectures will be delivered by Professor George H. Mead on the subject: "The Philosophy of the Present." Lecture I: The Present as the Locus of Reality; Lecture II: The Social Nature of the Present; Lecture III: The Implications of the Self.

### MONDAY, DECEMBER 29

Monday, December 29
12:30 p.m. Luncheon.
2:00 p.m. General Session.  The Nature of Knowledge and the Knowledge of Nature  H. S. Townsend
Belief
The Reality of the Imaginary
8:00 p.m. The First Carus Lecture.
Tuesday, December 30
9:30 a.m. General Session.  The Nature of Universals and Abstractions. D. C. Williams On the Nature of Causality . E. T. Mitchell Mr. Lewis and the A priori A. E. Murphy
12:00 Noon. Luncheon.
1:30-4:30 p.m. General Session.  Process and Reality: Some Comments on Professor Whitehead's  Metaphysics W. M. Urban  Is There a Case for Nominalism? D. W. Prall  The Linguistic Origins of Certain Philosophical Concepts  E. H. Lewis
4:30 p.m. Second Carus Lecture.
8:00 p.m. Smoker.  Presidential Address: On the Second Copernican Revolution in Philosophy

# WEDNESDAY, DECEMBER 31

8:30 a.m. Meetings of Divisional Executive Committees.

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9:30 a.m. Annual Divisional Business Meetings.		
10:00 a.m. General Session.  Thought and Experience		
12:00 Noon. Luncheon.		
2:00 p.m. General Session.  A Theory of Judgment and Geometry of Logic		
4:30 p.m. The Third Carus Lecture.		
7:00 p.m. Dinner. Presidential Address: De Angelis		
Requests for reservations should be sent to Professor W. R. Dennes, University of California, Berkeley, California.		
The program of the Thirtieth Annual Meeting of the Eastern Division of the American Philosophical Association, to be held at the University of Virginia, December 28, 29 and 30, is as follows:		
SUNDAY, DECEMBER 28 8:00 p.m. Smoker.		
9:00 p.m. Meeting of the Executive Committee.		
Monday, December 29		
9:30 a.m. Welcome by President Alderman.		
Symposium: Logic as a Tool of Philosophic Inquiry.  On Behalf of Philosophical Logic Rupert C. Lodge On Behalf of Symbolic Logic Henry Bradford Smith On Behalf of Pragmatic Logic Sidney Hook		
1:15 p.m. Visit to Monticello.		
3:30 p.m. Division I: The Philosophy of Science.  A Fundamental Difference between the Natural and Social Sciences.  W. Edwin Van de Walle  A Defence of Causality.  William Pepperell Montague  The Forms of Law Discoverable in a Changing World  Percy Hughes		

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3:30 p.m. Division II: Problems Inherited from Greece Aristotle's Definition of the Soul
7:30 p.m. Annual Association Dinner.  Presidential Address: On a Possible Science of Religion  Edgar A. Singer, Jr.
TUESDAY, DECEMBER 30
9:30 a.m. Annual Business Meeting.
10:00 a.m. Some Recent Contributions to Aesthetics (Philosophy of Art by C. J. Ducasse; Beauty by Helen H. Parkhurst; Aesthetic Judgment by D. W. Prall).  DeWitt H. Parker Thomas Munro Katherine Gilbert Laurence Buermeyer
2:00 p.m. Division I: Ethics and the Philosophy of Religion.  The Genuineness of Transitory Values
2:00 p.m. Division II: Problems of Logic. Induction
Requests for reservations should be addressed to Professor C. K.

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Requests for reservations should be addressed to Professor C. K. Davenport, University of Virginia, University, Va.

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DE ANIMA: PSYCHOLOGY AND SCIENCE

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CINCE the seventeenth century, when the notion became common I that progress was possible in philosophy and science only by breaking with the scholastic past, it has been customary to underline the novelty of the new philosophy and the new sciences by repudiating the occult qualities, the substantial forms, and the substances of preceding systems. The revolution in psychology and in the theory of knowledge follows in that scheme of progress. device is, to be sure, older than the seventeenth century: Aristotle disposed of entities which had been esteemed necessary to philosophy-platonic ideas, pythagorean numbers, democritean atoms being among the concepts rendered fruitless by the aristotelian soul; Thomas Aquinas disposed of the plurality of substantial forms and of seminal reasons in explanation of the activities of the aristotelian soul; William of Ockham was so proficient in the use of his razor that that aspect of his philosophic activity alone seems to have escaped oblivion, but in particular he could explain the activities of the soul without the soul itself or the faculties of the soul. Most of the negations of the seventeenth century have had precedents in the history of thought, save possibly in some instances where, in access of dialectical ardor, positions were refuted that had never been held. The philosophical difficulties, however, in which the new sciences found themselves, and the new problems they discussed, did not arise from the entities they denied, but from the systems of explanation which they adopted. There should consequently have been no reason for inquietude in the decision to which psychologists of the last century, following in the line of the development of the sciences, saw themselves forced (psychologies as divergent as those of Wundt and Brentano could be in agreement on this point), sometimes in emulation of the methods of the physical sciences, sometimes compelled by the exigencies only of rational analysis, that psychologists should be content with an account of phenomena and should dispense entirely with substance. and the mind were disposed of; in some systems consciousness, in others unconsciousness, was unnecessary to the explanation of psychological phenomena; instincts were sometimes abandoned, sometimes reduced down and analyzed; ideas suffered various substitu tions and analogies. Yet so slight is the apparent threat of these annihilations that precedent, unfortunately forgotten, could be found for most of them in the labors of the invincible Ockham and his followers.

It is impossible to encompass in any single description the progress of psychology without a soul. There has been such a multiplication of systems, of techniques of analysis, such alterations in the divisions of subject-matter and in the statement of properties and functions to be explained, that one is at loss to enumerate the new truths and methods. The internecine warfare between systems, moreover, makes the task of estimation more difficult than had been the refutation of the unified ancient error. In the large, it is true that the doctrines and techniques of the ancient science have been abandoned, and they have come, in the measure in which they have been forgotten, to be little esteemed. So definitely, indeed, has the historical dogma been set, which tells of the formation of the sciences out of scholasticism, of the separation first of physics from philosophy which had ceased from omniscience, then of chemistry, finally of biology, psychology, and the social sciences, that the suggestion that wisdom may be learned by a backward glance will face the resistance of an a priori improbability. dogma is that states and histories of states can be examined in whatever detail is made possible by any of the variety of techniques, but if the inquiry concerning a state threatens to run into the inquiry concerning that of which it is a state, or if the state is in danger itself of being entitized, the inquiry ceases at that point to be scientific.

None the less, notwithstanding that the contention of the modern psychologist, maintaining the soul can not be the object of a science, may be fundamentally sound, and notwithstanding that the notion of the soul had been so freighted with confusing connotations that to ignore it, even for less sound reasons, would have been helpful to psychology, it is not impossible that the predicament of psychologies to-day has been the consequence of the happy exclusion of the soul from psychology. The solution of the predicament, however, may require not so much the reintroduction of the soul to be the object of a science, as the examination of the reasons why a science of the soul is impossible. For to affirm that there is or that there is not a soul is less important than the consequences of Such affirmation or denial, and modern psychology has been concerned too long with the reality and integrity of the entities it examined without concern with the consequences of the examination, whatever the reality of the entities. In respect of the philosophical consequences to which they were intended, Ockham's repudiation

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of the doctrine of the soul as held by his predecessors is identical with the affirmation of the soul by Aristotle: for Ockham meant to emphasize that the soul is nothing over and above the activities of knowing and moving that are attributed to it, and Aristotle wished to emphasize that no entity, harmony, number, or principle is necessary other than the principle of such actions and movements as an organic body can encompass.

The soul as substance, therefore, in the aristotelian sense of the actuality of the organic body, need not have interfered with the concern of psychologists exclusively with phenomena; it would on the other hand have permitted a transition into a group of problems which are difficult to state in terms of phenomena only. The soul, as Aristotle affirmed it, is to the body as axeness is to the axe or as vision is to the eye. There is no difficulty in understanding that even the fullest examination of the physiological and physical constitution of the eye will not explain seeing, that the examination of the material or even the figure of the axe will not explain cutting: in either case such examination will disclose at most the possibility of such acts. But to explain an act in any scientific sense it is not sufficient that the potentiality be known-or even the efficient cause that may set the potentiality on the way to realization-science is achieved only when the end realized, the act itself, is known. Science is properly not of matter or of efficient cause, but of form or end. The act is possible through the organ, but function and organ are explicable and intelligible only through the realized act, the end of the function. In most experimental physical sciences the formal element, the principles of the process in question, can be introduced without remarking that one has proceeded beyond the matter which the experiment examined, for every actuality is a realized potentiality; and every stage of experience, potential to some further stage, is the actuality of some previous stage. in the soul does the process come to an end, since the soul is the final actuality of the organic body, and there is nothing beyond the soul, save itself, to which it can be considered potential. It is, therefore, never the matter of examination, and it can easily be ignored in an experimental approach, since it furnishes only a principle of order for sciences, not the basis for a new science, and in modern theories of science order is less esteemed than new data.

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As axeness, then, is the actuality of the axe, vision the actuality of the eye, so the actuality of the human body is the form of its activity or the principle of its action. The form of activity which is possible to the organic human body is not entitized by being recognized and having a name imposed on it. On the contrary, science of processes is impossible, if it is not recognized that activities have

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principles as well as materials. But the new science, having in its infancy entitized all principles, developed a new caution with respect to them: on the plea of following nature closely and grounding itself in experience, it introduced new principles (or even old principles in the guise of new) profligately, seeing in them only legitimate observations, since they were always matter for the explanation of activities, denying them only when they became ultimate and matter for nothing further, that is, first principles. the time when Locke carried that method into general philosophic practise, psychology has pursued with fine faithfulness the method of analyzing sensations to understand memory, instincts, habits, complexes, reflexes, and then analyzing them in turn to understand The relation of body to mind became first a problem, and then insoluble, since the examination of the activities of the body, of course, disclosed nothing save bodily activities, and the search for the soul had developed into a search for incorporeal activities, not for the principle (as principle, incorporeal) of the activities of the body. The problem of the relation of body and soul should be no more difficult than the problem of the relation of axe and cutting. If psychologists can consider the relation of glands to emotional and intellectual functions, there should be no difficulty in the relation of body and soul: that difficulties have been encountered is the result of the attitude according to which it can be recognized that glands may influence intelligence, while no significance can be attached to the possibility that intelligence may be the principle or actuality of glandular secretions. None the less the history of the sciences suggests that when principles can be discovered, it is wise to abandon the integrity of one's subjugation to experience, to the extent at least of ordering experience according to principles. The dilemma of experimental psychology suggests, as reinforcement of its inquiry into origins, the aristotelian truth that the principle of sensation is reason, and the principle of reason the soul.

Whereas the sum of ancient and medieval psychology, for that aristotelian reason, is to be found in treatises entitled de Anima, modern psychologies study the career of sensations as they become ideas, or conditioned reflexes as they are grafted on unconditioned reflexes and undergo their proper processes of multiplication and coördination, or conative impulses as they oppose or reinforce each other or become submerged. Whatever the manner or line of genesis, by the modern method, the later and more elaborate stages are to be explained by simpler and earlier stages with which they can be shown by analysis to be connected, or from which they can even be supposed to have originated. It makes little difference whether psychoanalysis, behaviorism, introspective psychology, or gestalt psy-

chology study the organism or the degree and kind of integration which a chosen variety of experience can achieve, the study is of the phenomena of a process whose end would be the actuality of the organic body; that actuality ancient psychologists called the soul.

Stated conversely, the observed phenomena which psychology has been concerned to explain can all be found labeled, with no violence to them, among the functions of the soul. Aristotle, indeed, suggested that the power of a thing be learned from the study of its functions, and from its powers, its essence. The importance of a backward glance at the doctrine of the soul does not consist in that many of the functions of the soul are still studied in the science of psychology, but rather in that some of its functions are no better known for all the revolution and liberation of science. If these functions are rendered clearer, in that process of clarification the nature of the science which had failed in its attempt at explanation may suffer a like illumination, for science has the peculiar position in this science of psychology, that it is the product of that function of the soul which has been least amenable to scientific investigation.

In the rational soul Aristotle found full exemplification of the ordering of faculties to a principle, for which the doctrine of the soul seeks to account. To have a rational soul is to be possessed not only of all the functions that might strictly be called rational, but also of all the functions that are presupposed to rationality. It is to have a vegetative soul, whose functions are growth. nourishment, and reproduction, a sensitive soul, whose functions involve the operations of the five senses, the manipulation of the data common to the particular senses (in the formation of such concepts as magnitude, motion, shape, and others), memory, imagination, and finally the functions proper to rational thought. Such faculties are not diverse entities, but the diverse activities of the organic body operating to appropriate ends. The problems with which psychology has been concerned have shifted during its history with the shifts of psychological techniques: progress in some types of analysis is possible without consideration of the principles involved, for some of the activities of the soul can be treated adequately by an examination of the bodily organs by which they are possible; but the predicament of psychology is that others are intelligible only in terms of the actuality to which they are directed. If psychology is considered as the science of the soul, the object studied by psychology is the actuality of which the body is potentiality, and three types of problems may be distinguished. One portion of psychology must be devoted to the study of the organs on which the activities depend as on their matter; properly,

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the study of organic and muscular behavior and neural organization, which are the bases for habitual and sensitive and even rational activity, is a derivation from physics or physiology. A second portion must be concerned with the relation of body to soul in the one sense in which that problem arises in these terms. that is, the relation of that which is potentially to the actuality which it may realize. Aristotle has left an instructive series of works, the Parva Naturalia, on the problems proper to this portion of psychology: the problems of sense and the sensible, of sleep and waking, of dreams, of the principle of movement in animals, of youth and old age, of longevity and brevity of life, of life and death, and of respiration. A third portion of psychology must be devoted to the problems of the rational soul itself-the formation of concepts and judgments (or the composition of propositions from terms), their relation to each other in inference, their application to subject things in induction. In this division, the subject-matter of modern psychology is derived almost clusively from the first portion; the second portion is dealt with occasionally, though less frequently, for its subject-matter is not wholly respectable among scientific inquiries, and its problems therefore, posed in the abstract, have found little in the new data of science to improve on the statement Aristotle made of them; modern literature on the third portion is very unimpressive when it is compared with the literature of antiquity and the middle ages.

Psychologists, none the less, from Democritus and Lucretius, through Telesio and Hobbes to Watson, have sometimes thought it the way of wisdom to reduce psychology to physics or physiology. Such a reduction avoids the difficulty that is indicated in the statement that there can be no science of the soul, and by it psychology is made a science with a defined subject-matter and therefore respectable. There are impressive instruments, and there are fruitful analogies between the sciences by which to prepare the formulation and resolution of many problems. Moreover, much that has been done in this tradition is in investigation of genuine and ancient problems of the soul's activity, since it is concerned with the first portion of the subject-matter of psychology. sum of that investigation leaves untouched an important aspect of psychical phenomena, and the suspicion is suggested by the problems that remain that sometimes more may be known by an examination of the causes of such ignorance than by a competent investigation that ignores, without further word, what can not be known; possibly the hint of the nature of knowledge may be found at the bounds of knowledge.

The sources of the difficulty of a psychology of the rational

processes is in the precise determination of its subject-matter. When the object of science is sensation, the psychologists of differing schools have no difficulty stating the subject-matter of their science: some have for data only the perceptions of sense, some have organic changes to investigate, some are able to state the relation of object, medium, and percipient. For all the differences of analysis, however, the work done can be reduced in the various systems to equivalent statements, and the differences consist not so much in a difference in that examined as in a different degree of confidence, displayed in the terms of the analysis, in the reality of something extramental, or in the actuality of the content of the mind. Sensation, however, is not itself perceived by sensation, but by a rational process, and it is therefore of a different order of investigation to ask what the mind knows when it knows itself instead of something other than itself. Actual knowledge is identical with the thing known, and when the rational soul turns to itself, it is itself that which it examines, and the increase of knowledge which its science of itself involves must in turn be object of that same science. The soul's knowledge of itself is an important activity to be considered in any explanation of the activity of the soul. Any technique of analysis that reduces rational processes to something other than the content of judgments, and which considers them in terms other than the epistemic and constitutive aspects of the propositions in which the judgments might be stated, is faced with the irreducible difficulty that thought is of a subject-matter, and that there are logical consequences to making thought its own subject-matter. The devices thus of behaviorism have been successful in the analysis of the thought processes, but should behaviorism be brought to explain the content of thought, should the contemplation by thought of itself as the terminus of a thought process be submitted to behavioristic examination, it is difficult to know how the analysis would proceed, for it is not clear how laryngeal conditions are related to a subjectmatter or how appropriately psychology could be described in terms of laryngeal conditions about laryngeal conditions. wise, to consider concepts in terms of the experiences or impulses that lead to them, or even in terms of the sense perceptions from which they originated, is to leave untouched the significances of concepts, for their significances are something apart from their histories. Theories such as those advanced in psychologyo may state fully how knowledge occurs, and they may be supplemented by philosophic theories to state how problems arise and are solved, but reason has the peculiarity that it may be concerning itself and the genesis of this characteristic is difficult to state in such

allegories, for it has no analogies and is shared by no other activity of man; its obstinate uniqueness is the more important to the understanding of the nature of thought since psychologists consider only the origins of thought. Knowledge is about a subject-matter; propositions can be asserted and denied; truth and falsity can be predicated of them; and as epitome of these characteristics, knowledge can be of itself and the mind can know itself.

II

These characteristics of speculative knowledge are stated and have their place in all save the more consistently materialistic or the more pertinaciously modern psychologies. For Aristotle the mind is potentially all things and actual knowledge is identical with its object. The thing as it enters into knowledge is idea; or as the medieval philosophers preferred to express it, the being of a thing in the mind is an intention: in its intellectual context the thing intends its own truth. Moreover, for ancient and medieval philosophers the possibility of certainty lay in the reflexive nature of knowledge. But even the mind's knowledge of itself knowing, is formulated differently and has taken on a different meaning in later philosophies. Modern philosophy has discovered imposing predicaments and has espoused or dodged striking dichotomies in exploring the possibility that the mind can know and can be only its own ideas. But when the labor of formulation is completed, usually either the world or the mind has disappeared (or else no inference is made): sometimes there is no mind, but only a congeries of ideas or their equivalent; sometimes there are no ideas, but only motor habits; sometimes there is no world save as idea or as represented by idea. Usually psychology is unperturbed by its predicaments, but the philosophies contemporary with the discovery of the predicament have shown their perturbation by schematizing the mind in categories or tracing the steps of reflective thought. The mind is either constitutive of knowledge or else it is reflective of a world or operative of instrumentalities on an imperfect environment in solution of problems. The system which permits the mind data will permit it no activity to transform the data save to the end of practical operation to alter the data; the system which permits the mind powers of synthesis or analysis can seldom say anything, save irreflectively, concerning the data as presented to the mind or as that with which the mind begins. The function of the mind realizing form from the data of sensation by abstracting from matter and individuality and their pendages, has been transformed into some process of disintegration, like that of sense decaying, or of devitalization, which is the

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present-day connotation of abstraction. The consequence of the modern recognition that the mind can know only its own ideas is found in the tendency to explain the sciences by the consideration of the nature of the mind and the processes of thought; the ancients thought, to the contrary, since mind is all things potentially, to know mind by studying the nature of the sciences.

The question, therefore, whether there can be a science of the neglected portion of psychology, that is, a science of that function of the mind which has to do with making propositions or judgments and ordering them in arguments, involves the consideration not only of the nature of the rational soul, but also of the nature of science. For if the finite mind is to be the object of such a science, it can be examined best in the propositions the mind forms; but whatever analysis is made, notwithstanding that knowledge and its object are identical, such is the relation of the potential and the actual that the subject-matter of such a science would always refer to an object other than itself. The subjectmatter of rational psychology should be propositions (or judgments) and their inter-relations; its object would then be the soul. If the soul is made the subject-matter in turn of a science, the history of philosophies which have made that attempt is sufficiently invariant to justify the conclusion that inevitably the study of souls suggests as object the eternal things or forms or relations which lie behind the operations of the rational soul.

The characteristics of the difficulty are easy to recognize. The subject-matter of a science of speculative knowledge would be all possible propositions. Any statement concerning that totality would add to the number of actual propositions; such propositions would therefore be made to apply to themselves, and thus the science would be involved in the vicious-circle fallacy; or else they would not apply to themselves, and then they would not state the science of speculative knowledge, since the science of speculative knowledge would not include the propositions it states itself, and would not therefore be speculative knowledge. difficulty is encountered whether the attempt is made to constitute the science by stating the self-evident first principles from which it might be deduced, or inductively by examining propositions in its subject-matter which may be true or false. The first approach yields propositions in the form of the insolubilia which agitated logicians of the fourteenth century, and which have come again to be discussed in the present age as propositions involved in the problem of types. They are propositions which when asserted to be true seem to import their own falsity. The second approach yields propositions in the form of those confidently ad-

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vanced as fundamental certainties by Augustine, Anselm, Duns Scotus, and other philosophers in the augustinian tradition; Descartes later thought to reformulate philosophy on a surer basis by means of one of them. They are propositions which, though doubted, involve some indubitable truth. The first propositions have figured in philosophies chiefly as involved in a logical problem, the second as the starting-point of a demonstration of God or as an example of self-evident truth. Together they illustrate the crucial peculiarity of the subject-matter of rational psychology.

The insolubile is a proposition which exhibits in itself the circumstance that the mind, since it has the power to make propositions, is able to make propositions about propositions; it must happen sometimes, therefore, that a proposition seem to apply to itself. When Epimenides the cretan says that all cretans are liars, the truth of the assertion seems to involve it in falsity. The contradiction is avoided by the old distinction between words that are about words and words that are about things, words of the second and first impositions; the references and intentions of the two may be different, though the symbol that expresses them be identical; propositions about propositions are of a different order from propositions about things. A proposition by which propositions of a certain sort are denominated false (and by the same token a proposition by which other propositions are denominated true or possessed of any other character) can not be made to apply to itself, since it is not merely a proposition, but a proposition about propositions. Moreover, since the rational mind alone imposes names and definitions, classifies, and makes propositions, the application of the vicious circle principle falls wholly within the subject-matter of rational psychology, and the statement of such a science would itself be involved in the problem of types.

The types and levels in which propositions and terms fall, lead, in the propositions of the second sort, to a problem different from that of classes which include themselves and propositions which apply to themselves. This problem has not concerned logicians, since it involves no logical fallacies and would at most lead to consequences concerning the whole realm of logic and not peculiarly concerning certain propositions; those consequences are metaphysical, and their striking peculiarity is that an existential proposition would seem to follow by inference from a problematic proposition, and a proposition concerning reality from the examination of the nature of propositions. This aspect of the types of propositions and the aspect which has been the concern of logicians have not been brought together, although the debates concerning

each have been considerable among philosophers. But the one has been the long logical debate concerning the validity of the distinction of levels in the application of propositions and the inclusion of classes which makes it impossible that either be reflexive; the other is the even more ancient metaphysical debate concerning whether the inescapable reflexive character of knowledge, which leads to a problem in logic, can itself be so stated as to involve necessary truth-whether, in other words, propositions can be made of such sort that assertion or denial of them will indifferently warrant the assertion of a proposition which can not but be true. The old truths of Augustine and Descartes have such a basis, and no refutation of them has met the arguments which seek to support them in the nature of knowledge, notwithstanding that numerous attempts at refutation have been stimulated by the distaste which later philosophers discovered for the theological consequences usually attached to them. If it is denied that there is an eternal truth, then it is true that there is no eternal truth, and that it is true eternally; therefore, there is an eternal truth. I may doubt all things, including my own existence, but I can not then doubt that I doubt and, to that minimum extent at least, that I am. I know that I feel, that I think, that I will, and Duns Scotus has pointed out that an infinite number of truths of this sort is possible (though Spinoza has remarked that the examination of the regress is not necessary to establish the truth of the first of the series) in that I know that I think, and I know that I know that I think, and so on indefinitely.

The two inferences that are based on the peculiarity of thought and of propositions, the inference by which the necessity of the thinker and that by which the necessity of truth are derived, are not of the same order as the contradictions involved in the vicious The argument that I think, therefore I am, is not circle fallacy. a proposition about propositions, but a demonstrative induction which depends for its force on the knowledge concerning knowledge of which the proposition about a proposition is the clearest instance. From the premiss, Any thinking is an instance of being, and the instantial premiss, This which I perform is an instance of thinking, the inference is made, Therefore all instances of thinking are instances of individual personal being. The problem turns about whether an act of thought can be about itself in such fashion as to denote itself and indicate its own existence unambig-The argument to demonstrate the existence of the individual thinker deliberately demonstrates a minimum truth, since it is directed usually, in the context of the philosophy in which

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it is stated, against complete skepticism: thinking about thinking indicates the necessary existence of the thinker, even though it leaves every other thought in doubt.

What has been demonstrated, therefore, in demonstrating that thinking, I am, can be examined further by considering what is involved in the argument that affirmation or denial of truth involves the affirmation of truth. The argument is based on the recognition that propositions are asserted as true (and judgments are made as true), that therefore the proposition which asserts the impossibility of truth is involved precisely in the problem of types: if it is true that there is no truth, the proposition is false in that it is true. conclusion that truth is eternal need mean for the soul, as it is implicated in the proposition that thinking, I am, nothing more than that propositions are assertable. Formally this would mean that the problem of types approaches a limiting case in the proposition which is not about propositions, but about that proposition itself: the proposition, This is a proposition, is neither impossible nor false; it is self-evidently true. And its self-evident truth brings out the characteristics of all propositions considered in knowledge, and therefore the characteristics of the soul which is potentially all propositions.

These characteristics emerge, as the result of the reflexive nature of knowledge, in the application of a proposition either to itself or to some part of itself. The conclusions can be based as easily on such a proposition as, This itself is a demonstrative pronoun, as on the proposition, This itself is a proposition, inasmuch as, in the respective cases, the context makes clear that the first is a proposition about the subject of the proposition, while the second is a proposition about the proposition as a whole. In both cases the peculiarity is that the propositions are not only self-evidently true, but their truth is evident because they present immediately the object whose significance is recognized in the statement of the proposi-The peculiarity may be made clearer by contrast with other cases that fall in the problem of types: the proposition, This is a proposition, is unlike the proposition, This is a true proposition, in that the negation of the latter, This is not a true proposition, is such that the assertion of it as true is the assertion of its falsity, since if it is true that This is not a true proposition, then it must be a false proposition, but in that case again it is true; that analysis does not hold for the negation of the former proposition, for the assertion, This is not a proposition, can not be taken even hypothetically to be. true without altering the definition of a proposition: This is not a proposition, is therefore self-evidently false. Moreover, the infinite regress which is one of the common dangers of propositions about

propositions presents no difficulty here. If it were asserted instead (for example) that All propositions have subjects and predicates, there would be the difficulty that that proposition would in turn apply to itself, and also to the proposition which made the applica-The truth which is stated in any proposition about propositions is enlarged by the constant necessity of including too within that truth the proposition which stated that truth. In like manner, the proposition, This is a proposition should be enlarged to "This is a proposition" is a proposition, and so on indefinitely, but unlike the first regress this is not the enlargement of a truth previously stated to include a new instance, and it does not therefore increase the scope of a class, but rather it is the addition of a new truth, like the former truth, to the truth already stated. The first type of proposition (as All propositions are true or false) converges on the class in virtue of which all propositions possess a given characteristic; the second (as This is a proposition), in virtue of the same property of knowledge, converges on the instance there stated. The first is a statement of characteristics which instances must possess; the second is the recognition of an instance from the possession of characteristics stated or implied. At first glance it might seem that, since the first is inapplicable to itself without fallacy, the second can not be selfevidently true by application to itself. For if the rule of application were stated, by which the proposition, This is a proposition, is applied to itself, it would seem to be a proposition in the form, All propositions have a subject and a predicate, and this is seen to have no application to itself by the theory of types. That, however, is not the case, but rather the nature of knowledge is again illustrated in the circumstance that although propositions concerning the class of all propositions are impossible, none the less propositions can be recognized and analysed. If a proposition is an individual entity with a significance which is not individual but analytic, the cruciar case is reached in the proposition the significance of which is direeted to identifying itself in its individuality.

If, in a word, propositions may sometimes be formulated in such fashion that they apply to themselves (and classes include themselves), propositions may on the other hand be formulated sometimes to indicate themselves (and classes to indicate classes). Propositions about propositions are fallacious when they state what propositions are or must be; they are necessarily true when they state that given propositions are, for propositions are involved in the statement that propositions are or are not (and knowledge is involved in the recognition that knowledge is or is not). The inference from propositions yields the realm of all possible propositions; the inference from thinking yields the reality of the individual

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thinker. The first is the statement of the possibility of science; the second, the statement of the existence of a thinker. The nature of the demonstration involved in the ontological argument and in Descartes's cogito ergo sum is of this sort, and any attempt to reduce either to syllogistic argumentation misses the cogency of the inference, since it ignores the immediate reality of knowledge itself (the idea of God, the cartesian doubt, or finally any proposition or concept), but seeks to state some principle by which an idea may be rendered more immediate than it is. The existence of the thinking mind is the only existence that the mind can affirm directly and certainly from its ideas; the relation of that mind to the sum of all possible propositions, which it is potentially, indicates the total reality to which the mind can penetrate, on the other hand, and the total intelligibility of all things on the other. Incidentally, too, it seals the impossibility of rational psychology.

#### III

The further inferences that have been based in the history of thought on the truths, that denying or affirming a proposition about truth, I affirm truth, that doubting, I am, have been concerned with working out the consequence that thought operates on fixed principles, eternal relations, changeless ideas—whatever they have been called the demonstration emphasizes the type of constancy that is displayed (for example) by numbers, and the example of numbers has figured in almost every philosophy that employs the demonstrations. It makes very little difference what they are called, for Ideas or the eternally subsistent truth are known in no other way than by the inference which proceeds from the truths discovered by the mind, since those truths are not sufficiently explained by the finite mind or the history of its experiences. By whatever name, the subsistent truth, God, the Ideas, the self, the world soul, objective mind, must, in the systems that expounded them, be unintelligible to finite beings in the condition of human kind. recognized, therefore, they can be ignored, together with the soul, so far as the purpose is to know the soul, since they lay bare the impossibility of a science of the soul-for the soul, since it is potentially all things, shares in the character that made the sum of things unknowable: if the science of all sciences is impossible, the science of that which is potentially all sciences is likewise impossible. demonstrations consequently which have come down the neoplatonic tradition in philosophy, reiterated strongly by all who have been

<sup>1</sup> For another statement of this immediate reality in ideas and interpretation of its relation to formal causes, compare R. McKeon, "Causation and the Geometric Method in the Philosophy of Spinoza," The Philosophical Review, XXXIX, May, 1930, 287 ff.

in the least influenced by Augustine, are designed to signalize the necessity, for the explanation of thought, of recognizing the necessary existence of that, the nature of which exceeds understanding, of which none the less all understanding is part. There is a God in all philosophies to function as formal cause of ideas. the wisdom of the medieval philosophers, who said that the soul knows that it is but not what it is, for even philosophers who have based their doctrine on the possibility of clear and distinct ideas of God and of the soul, are anxious to add that such ideas are not total, nor complete, nor exhaustive of the nature of either. For the rational soul is potentially all things and all propositions that might be made. But there is a double convergence of propositions, approached according to their form or according to their matter. Propositions which purport to be about the soul are part of the possible sum of propositions, and illustrate the nature of the soul. but for that reason are not statements of its necessary nature. this sense psychology is no more the science of the rational soul (nor is it more fruitful of information concerning the soul) than physics or any other science that explores the intelligibility evinced in concepts and inferences, and that engages in the processes of making propositions related to each other by the devices of scientific demonstration. To that extent empirical and experimental psychologists have been correct in their refusal to consider the substance of the soul and in contenting themselves with phenomena. But the determination to limit oneself to phenomena will not annihilate the circumstance that states and conditions are states of something and that the nature of that thing is not exhausted by the summation of its states, and further, that those states can not be understood in themselves alone.

The various sciences, then-including the various kinds of psychology-may be considered the subject-matter by which to elucidate the rational soul. Marks of the difference between what a science of the rational soul would have to be and other sciences are frequent in The physical sciences have rarely been in doubt that subject-matter. concerning their subject-matter, for the objects they studied were definable; they have, however, been in doubt frequently concerning what the science of that subject-matter is. But psychologists have perplexities concerning the subject they are to investigate, and the subject-matter of psychology shifts from book to book in the tradition of psychology. On the other hand, for all the definiteness of delimitation to which the subject-matter of the physical scientist is susceptible, it is not impossible to introduce doubts concerning whether or not objects exist to which his science is applicable. Psychologists may hesitate concerning whether they are to study ideas or neuro-muscular conditions, but no philosophic doubts arise concerning the existence of either, because the philosophic tradition initiated by Locke has thrown no doubts on the existence of ideas, and the other philosophic tradition which has influenced psychology has inherited only the difficulties of physiology, untroubled by peculiar philosophic problems.

At first sight the examination of the sciences to learn the manner of operation of the mind seems to afford little clarification for the consideration of the soul, for the constitution and methodology of science is as much in dispute as the subject-matter of psychology. But if the analysis which has been made is pursued further, some of the confusions of the theory of science may be avoided, inasmuch as they follow as a consequence of having interpreted science in accordance with the various dogmas of psychology. If science is formulated in the terms of psychology, it is the effect of sensations and experiences ordered in the mind, or the active resolution of problems to which experience gives rise. But if the sciences are considered in terms of what they are, rather than in terms of their origin, that is, as bodies of knowledge statable in propositions ordered in certain relations, they are caused not by the data that enters into them (a proposition is not caused by its subject and predicate, save in the sense that they supply the data with which it is concerned, that is, they are its material cause), but by the ordering principle by which they are arranged. The sciences are the effects of the soul which is potentially all things. Sensation and experience, which supply the materials of sciences (as subject and predicate supply the materials of propositions), far from causing them, save as material causes, are themselves intelligible only by the activity of the soul and as a consequence of science. There is no mystery in this dependence of the sciences on the soul, for the soul is in no sense creative in its activity of stating the sciences, nor is it presumed in recognizing the soul as cause of the sciences, that anything further is known therefore of the soul; it is unintelligible precisely because its effects are known directly, and an unknown cause can not be known determinately by inference from its effects. Stated paradoxically there is no science of the soul, yet without the soul no science is possible, and without the recognition of the soul no science is intelligible.

That the soul knows that it is, but not what it is, presents no difficulties. To know one's ignorance an exhaustive knowledge of the nature of that which one ignores is not needed. The statement, I do not know physics, can be accurate without a preliminary research into the subject of physics which might make certain that one had been ignorant, but would also destroy the ignorance; the statement can be true only without such research. What the mind knows

in knowing itself is that there are changeless relations (whether logical or metaphysical) disclosed when it formulates its thoughts carefully, and that each careful reformulation will disclose the same relations. It does not discover or encompass directly eternal relations or eternal objects such as its thought may be based on, for its thought is the reflection or utilization of those relations. Nor can it from the effects prove the objects with cogent demonstration, since that would be to know them. Nor, on the other hand, is it necessary that any fixity of scientific language or dogma result from the eternity of relations on which science is founded. Eternal things do not make necessary an eternity of the symbols in which they are stated or reflected. The nature of symbols, indeed, necessitates the possibility of an equivocal as well as a univocal use of them. important effect of the relations with which the soul comes to be identified is that, when symbols are used univocally, when they are defined carefully, propositions are sometimes yielded which are selfevidently true, and that those propositions in relations sometimes yield demonstrative consequences which are constituted the sciences. Approached from the side of propositions (or ideas), rather than from the experiences of instances from which the propositions might be supposed to be generalized, there is no need for the caution displayed by the postulate theory. Sciences are based on first principles known intuitively to be true, not on postulates hypothetically entertained. That definitions of words can be changed is sufficient to account for the shifting significances of propositions; if propositions belong to independent systems derived from different definitions, there is the problem of translating them from one set of terms to the other, but there is no contradiction to resolve. knowledge consists in demonstrations from principles known intuitively; its conclusions are commensurately universal and necessarily true; they can not deal with the perishing thing. lems of induction are in the form of asking dialectical questions to discover definitions that may profitably be taken to apply to things. Once an answer has been obtained to the question, by whatever device, This is such or it is not such? the procedure is as in demonstrative knowledge. All propositions about finite changing things are only problematically true.

The modification which the soul makes necessary in the theory of knowledge is obvious. If psychology is the science of an organism or a consciousness operating among the data of experience, science is concerned with propositions generalized from experience. If psychology is a science of the functions of the soul, though the soul is itself unintelligible, science is concerned with propositions deduced from self-evident truths. The tendency in modern theories of

science is to make science consist exclusively of propositions about finite changing things observed under experimental controls; these are found to yield no absolute certainty; yet such certainty as they vield is taken to be the highest possible, since no greater can be attained relative to things observed in time and space; it is concluded therefore that absolute certainty is impossible. It is difficult to decide whether that theory of science is the result of a psychology which is concerned only with phenomena, or whether psychology has been constructed to ape physical sciences. The problem of the nature of science, in any case, is seen most sharply revealed in the science of psychology itself, for that science purports to study in part at least the faculty by which science is possible. To psychology without a soul, a science of the soul is meaningless; science itself, save in the sense of an ordering of data, is impossible; and true and false become terms of unending dispute and relativity. If the place of the soul is recognized, it is still impossible to have a science of the soul, since there are no self-evident propositions suitable to generate a demonstrative science of the soul, and the problematic propositions which experience might suggest are parts of the soul, not its principles. But the recognition of the nature of the soul will permit the statement of a theory of science that will transcend the mere statement of data collected and ordered; it will permit considerations of truth and falsity and the statement of first principles to be introduced without disguise or hesitation; and it will suggest a subject-matter in which what is possible of rational psychology may be worked out in terms of demonstration and the dialectical examination of arguments, rather than in terms of facility of learning, scope, and retention. The vicious circle principle, however, the presence of which among the propositions of the mind speculating about itself makes such an analysis possible, will not admit a demonstration of the final validity (or a refutation of the error) of one or the other of these approaches, from the soul or from things, for if either demonstration were possible it would be a science of the soul. The choice must be by a comparison of effects, since in either analysis both theories are the effects, not the principles of the soul: of the two, the doctrine that the soul is, so expounded and apart from the further effects that depend on it, has its chief persuasion in the recognition it permits of the characteristic activity of the soul reflecting on itself.

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RICHARD McKEON.

#### RELIGIOUS EXPERIENCE AND METAPHYSICAL SPECU-LATION: A NOTE

THE historic connection between metaphysics and religion is, of course, notorious. The fundamental premise of metaphysics-the existence of an unseen reality distinct from those in experience and independent of them-arises out of the presumptions and technique of religion. The other characteristic postulate of metaphysics—that this unseen reality is somehow congruous with human nature and human desires; that, one, eternal and spiritual itself, it guarantees the immortality and freedom and ultimate happiness of man-is a conceptualization and refinement of the myths and rituals of practical religion. The metaphysics of the great tradition is preoccupied with proving that the immediacies of experience are appearance, errors, illusion; that reality is behind experience, not in it, and in one way or another as the heart desires From Plato to the latest of the idealists-to Whitehead or Croce—this is so. Even atheists and materialists do not elude the contagion. If they give up trying to prove God and freedom and immortality, they are nevertheless preoccupied with proving the world's unity and eternity against the manifest flux and manifoldness of experience. Almost immediately behind the concepts of the metaphysician lurk the divinities of the priesteraft, behind the dialectic of the speculative philosophies play the rituals of the churches. Look at the conceptions and practices of the dominant ecclesiastical establishments of a people or a civilization if you wish to understand its prevailing philosophy. The medieval declaration that philosophy is the handmaid of religion holds over in practice to our own day. Although the speculative enterprise has been liberated from the ecclesiastical rule and is no longer under compulsion to vindicate and secure questionable articles of faith with doubtful arguments of reason, it is still largely preoccupied with just that So far as essential objective goes, Eddington and Whitehead are no less body servants to theology than Aquinas and Scotus. Religion and metaphysics appear like the Siamese twins, distinct, often opposed personalities, each sick of the other, but with the same life-blood circulating through their veins.

Thus the liberation of metaphysics from religion might seem to require a major operation which could be fatal to both. Prior to the nineteenth century, non- and anti-religious philosophies are neither numerous nor frequent in the history of thought. Keen of insight and excellent in structure though they may be, they fail to be taken up and do not survive. In spite of the fact that science and industry have tended, at least among the intellectual classes, completely to secularize the tools and processes of thought.

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metaphysics tends to theologize them all over again. Philosophies which stay on the secular level are somewhat despised by the profession and looked upon without enthusiasm by the laity. There is no high adventure in them, no ultimate joy or precious salvation to gain. They are sober, disillusioned, pedestrian, tentative, and sceptical more often than dogmatic and assured, and they bring no consolation. They are concerned with methods rather than conclusions, with experiences rather than principles. The high argument which, for the thousandth time over again, reëstablishes the compensatory ultimacies, is not for them. Haeckel and Dewey are extreme varieties of the practitioners of these pedestrian philosophies, and nobody who is anybody among the metaphysicians seems to like them.

Another instrument for excising the bond between religion and metaphysic, without too much danger of killing the patients, is the experience called religious. "Religious" is a bad epithet in the connection, however. It does not characterize the experience, it only designates the locus of its occurrence or seeking. Its setting, its imaginative and conceptual antecedents, its defining consequents, are usually "religious." But this is due to a connection of the folkways, not to any intrinsic connection between religion and the experience. It can, and does, occur in any setting-the dentist's chair and the operation table, among others—and is subject of any interpretation. Subject, I say. It differs from every other experienced event in that it can not be used as a predicate. differs from all inferred and represented metaphysical objects in that no articulate structure or anything else than its own directly apprehended quale can be attributed to it. It is ineffable. makes no deliverance. Yet it is an event of immediate experience and with more than the characteristic warmth and intimacy and "so-ness" of the immediate.

That no empirical substitutes or equivalents for this experience have been discerned, that it is always "knowledge of acquaintance" and is not an available component for "knowledge about" anything else, may be due to the fact that its occurrence as perception is not translatable into other occurrences as perceptions. Stimuli of the eye, ear, nose, skin, and the like, may be transposed and stated in terms of one another, as the movie and the talkie do. These stimuli can be generalized into a common energy or activity and that reconverted into specific sights, sounds, touches, tastes, and such by means of appropriate transformers. Not so the religious experience. If it has an organ, its organ is altogether different from the familiar ones in status and function. So long as these operate at all, normally or abnormally, the religious ex-

perience does not occur. For it to occur, the normal modes of perception must have completely broken down and been abrogated. The breakdown is usually attended with hallucinations and other disturbances of the perceptive function, and experiences of these are often designated as "religious," as they very properly should be. But the "true" religious experience, the event which the mystic celebrates and lives and dies for, does not happen until other forms of experience have been made impossible by the functional breakdown of the normal organs. The mystic disciplines, such as yoga, the fastings and flagellations and exposures of ascetics, are designed to accomplish this breakdown. Drugs accomplish it. And any personal or social crisis may bring it on.

When it has occurred, men often declare that they have seen They try to characterize the way of seeing, calling it intuition, pure reason, love, and the like. But "God" is a predicate applied to the experience, an endeavor to define and to classify it, not to exhibit it. Intuition, pure reason, love, and so on are similarly names for heightened forms of the normal modes of perception predicated concerning the mode of the religious experience. The experience does not call for them, does not imply them. The reasonings and attributions of such thinkers as Plotinus, St. Bernard and other Christian mystics, as Spinoza, and as Bergson, are accidental to institutional associations, to available intellectual tools, and to tradition. That the predicates of Plotinus and the Christians, or for that matter of the Brahmin and Taoist philosophers, are drawn from their setting is obvious. needs little pointing out to realize in how great a degree Spinoza's adequate ideas and intellectual love of God, Bergson's intuition and instinct, are compenetrations of new instrumentalities of The latter's élan thinking with traditional attitudes and forms. vital stands out as such a compenetration. Bradley's absolute, and the way it presents itself to feeling, are more like a break with the tradition, closer to an independent approach. And there is a genuine novelty in Santayana's interpretation of the religious experience as the immediate intuition of what he calls matter. In my Why Religion I myself have detailed reasons for predicating otherwise imperceptible forms of radiant energy impinging on the cortex without response as the content of the experience.

But its chief liberative influence comes not so much from the ruminations and reasonings of professional philosophers more or less loosed from the ecclesiastical setting and its ideas, as from the testimony of secular mystics, to whom the experience comes altogether out of connection with the religious establishment, its images, practices, concepts, and rationalizations. Such a secular

mystic was Benjamin Paul Blood, the friend of William James, celebrated by him as a "pluralistic mystic." Blood fell into the ·experience in the dentist's chair and pursued it through many minds and places—in hospitals, in laboratories, among poets, politicians, scientists, and the common folk. For his first attempt to make a deliverance concerning it he had available the dialect of the school of metaphysics prevalent at the time—that of American neo-Hegelianism. And his exciting little paper, "The Anæsthetic Revelation" was couched in that idiom. As he continued to live with and for the experience, in the course of his long life he unlearned the neo-Hegelian language, and worked up a diction more completely secular. His Pluriverse expresses this spontaneous mystical insight in this new language. Printed more than a decade ago. it fell like lead from the press; but there is an even chance that sooner or later some adventurous young mind will happen upon it and draw from its difficult but far from impenetrable depths the materials of a new philosophy. At the heart of this philosophy will be the ineffable mystical experience, unmediated either through the stuffs and forms of religion or of any other institutional establishment. Hence it will validate no foregone conclusion, prove no unity, no eternity, no God, no freedom, no immortality. It will impel the mind upon the new type of philosophic adventure which has no inevitable and no terminus. If Blood's own attitudes and views are a sample, this new philosophy will involve a curious compenetration of the works and ways of Taoist quietism and pragmatist energy. It will be secular, disillusioned, courageous and serene, humanist in its aspirations, scientific in its techniques and radically empirical in its insights. But most of all, it will be free from foreign entanglements, especially ecclesiastical, and exercise its functions for their own sake.

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#### BOOK REVIEWS

Rational Induction. An Analysis of the Method of Science and Philosophy. Homer H. Dubs. Chicago: The University of Chicago Press. 1930. xv + 510 pp.

By "rational induction" Dr. Dubs means the method of hypothesis, which has been the method of the sciences and ought to be the method of philosophy. Rational or hypothetical induction thus includes as indispensable aspects of itself, not only what traditional logic has called "induction," but also what it has described under

the head of "deduction." Professor Dubs's main thesis, then, is that "rational"—as distinguished from merely empirical—induction gives certainty and therefore genuine knowledge. The proof of the thesis consists essentially in showing by a survey of the history of science that the method of hypothesis has led to trustworthy results. This proof, as Dr. Dubs frankly admits, involves a petitio; but it is a petitio which is inevitable and therefore unobjectionable. For it is obvious that any logical method which is assumed to be ultimate must be used to justify itself. The objection that many hypotheses have been "verified," only later to be abandoned as untenable, is met by the doctrine of "limited universals." Rejected hypotheses, says Dr. Dubs, have not been proved untrue; they have rather been shown to be limited in their application. For example, the Newtonian laws have not been refuted, but still hold true as special cases of Einstein's laws. (See p. 279.)

Dr. Dubs's analysis and defence of scientific method seem, for the most part, sound and convincing. And yet, in discussing whether various logical methods give us "certainty" or mere "probability," it would be well to make somewhat clearer than Dr. Dubs has done the precise sense in which these terms are to be understood. What is "certainty"? Does it mean (1) a feeling of assurance, or (2) the right to enjoy this feeling? The former we may call psychological or experienced certainty; the latter, logical or demonstrated certainty. We must be careful, however, not to distinguish too sharply between these two varieties of certainty; for it is obvious that the latter presupposes and depends upon the former.

A recognition of this relationship would, I suspect, have saved Dr. Dubs from the futility of arguing that science attains "certainty" rather than "probability." For there are degrees of certainty; and there is accordingly no important difference between the assertion that a given event or proposition is "very probable" and the assertion that it is "very certain."

And this suggests a further distinction. If we are thinking of logical certainty—of the right to be certain—which I suppose is the sense in which Dr. Dubs usually employs the term, we may content ourselves (a) with what, for want of a better name, may be called practical or moral certainty, or we may insist (b) upon a certainty which is absolute—that is, which is the upper limit of the scale of probabilities. Now it must be said that in his vindication of "rational induction" as a method for the attainment of certainty. Dr. Dubs seems to be satisfied—wisely, I should think—with sense (a); while in his disparagement of all other methods of truth-seeking, as eventuating in mere opinion or probability rather than genuine knowledge, he appears to insist upon the more rigorous meaning.

All that we have a right to demand of any method is that it yield results which are free from reasonable doubt; and a doubt which would apply just as well to any other statement as to the one in question is not a reasonable doubt. This, it seems to me, is the true refutation of the skeptic. In a sense, the skeptic is right: it is possible to conjure up a doubt concerning anything whatsoever. But a doubt which holds against all truth-claims need not disturb us; for no one—not even the skeptic himself—is able to take it seriously. The important question in any given case is not whether the thing is absolutely certain, but whether the evidence in its favor is at least as good as that which can be adduced in favor of other things which we regard as certain. Truth-seeking is thus an endeavor, with as little renunciation as possible, to attain a coherence of certainties.

In his section on deductive inference, which, as we have seen, is an essential part of "rational induction," Dr. Dubs describes the syllogism as an argument consisting of *five* propositions. To the traditional three he adds, in each case, the canon and the "validating proposition" (p. 158).

The explicit statement of the canon has the practical advantage that it permits an extension of the notion of syllogism so as to include forms of inference other than those traditionally recognized. Nothing seems to be gained, however, by an explicit statement of the "validating proposition." If the syllogism is rightly put together, the affirmation of the "validating proposition" makes the argument no more valid than it was before. On the other hand, if the validating proposition is denied, this denial is either true or false. If the denial is true, the syllogism was already invalid; if the denial is false, the syllogism remains as valid as before.

Even if we should grant the desirability of stating the canon and the validating proposition, we could not agree with Dr. Dubs that his analysis of deductive reasoning destroys the "ideal of modern rationalism" (p. 187). For in the first place, Dr. Dubs himself admits that the canon and the validating proposition are not premises in quite the same sense as the others, which he designates as material premises or propositions (p. 158). It follows, then, that we may still seek to derive the greatest possible number of theorems from the smallest possible number of primitive material propositions. In the second place, even if we put all four "premises" on the same level, we may still organize and reorganize a given body of doctrine so as to have the smallest possible number of unproved propositions.

The ideal of simplicity as applied to the choice between alternative hypotheses also seems to have been misconceived by Dr.

Dubs. He holds (p. 287 ff.) that nature is not simple, and there fore that the simplest hypothesis is not always the best explanation This may, of course, be granted. But, so far as I know, no one has ever interpreted the law of parsimony in quite this way. It has usually been understood to mean that of two hypotheses which explain the same group of facts the simpler is to be preferred. circumstance that relatively simple hypotheses have in some cases been superseded by hypotheses which are less simple results from the . inability of the older hypotheses to explain all the relevant facts. Dr. Dubs's principle that "otiose elements" of a complex hypothesis are not established in the verification of the hypothesis (p. 250) is sound enough; but it does not take the place of the principle of simplicity. The epicycles of the Ptolemaic astronomy can scarcely be said to have been otiose! They were needed to explain the movements of the planets. As long as the hypothesis was itself retained, the doctrine of epicycles remained an essential part of it.

In calling attention to these respects in which Dr. Dubs's account of scientific method has fallen somewhat short of perfection, I do not wish to detract from the worth of the book as a whole. I wish to repeat that, in my judgment, the author's defence of science is convincing, and that in the main the analysis is sound. He is certainly justified in his insistence that the method of philosophy should be in principle the same as that which has been employed so successfully in the special sciences. The book shows marked honesty of purpose combined with a wide reading of the relevant literature; and where one disagrees with the positions taken, the treatment is found to be unusually stimulating and thought-provoking.

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Die Form des Erkennens. WILHELM GREBE. München: Ernst Reinhardt. 1929. Pp. 144.

This book consists of a series of loosely connected and somewhat obscurely written studies on the nature of logical form. It maintains the sound thesis that a judgment is never about itself, and that some confusions in logical theory can be cleared up by keeping distinct the content of judgments from the logical form in which it becomes "enveloped" when known or judged. It seeks to "validate" the logical form tacitly assumed in formal logic, by discovering the "primary source" from which the principles of that science derive their meaning. Upon the basis of a thoroughgoing dualism between a single logical form, intrinsically meaningless, unimaginable or representable in intuition and uncertain in its application, on the one hand, and a plurality of contents, meaningful and intuitable as

well characterized by necessary structures, on the other, Grebe manages to obtain interesting though familiar results. Some well-known logical paradoxes are resolved by invoking this dualism; Berkeley's nominalism receives merited strictures; and an adequate critique of the correspondence theory of truth is carried out by pointing to the infinite regress which it implies (p. 41).

But the correlativity of logical form and content, which is the central thesis of the book, turns out to be of a specious kind, since it soon appears that only in a (narrowly conceived) knowledge situation does content possess logical form at all (p. 12). Knowledge is indeed defined as being the resolution of initial doubts which involve non-cognitive possession of subject-matter. But instead of developing thereupon the outlines of an instrumental logic which seems the natural heir to such a beginning, Grebe finally understands by knowledge an inherently passive contemplation, and relegates the activity which he admits accompanies the resolution of doubts to a realm of non-logical considerations (p. 193). Indeed, the doubt which initiates inquiry is of a very pallid sort, raising only the question which one of severally enumerated assertions can be made, and not the discovery of what the conditions and details of a satisfactory solution to difficulties may be (p. 12). Consequently, he commits himself to the doctrine that valid knowledge has no extrinsic criteria (p. 104), that knowledge is essentially recognition (p. 20), and (apparently) that experimental methods do not produce their own adequate norms (p. 100).

Since logical form is declared to be "meaningless," it is perhaps not strange that very little is said of it explicitly, and the only definite thing it appears to be is the form of assertion. Thus, "the white of this rose" is mere content devoid of logical form, although "this rose is white" exemplifies content imbedded in form (p. 16). But since there is only one such form, and since knowledge is obtained whenever this form envelops content, one wonders what the difficulty is, on this view, in obtaining knowledge easily and at all times. Grebe succeeds in saving the consistency of his procedure, (he does talk about logical form after all) only by maintaining that logical form as content is never identical in nature with the form in function (p. 71). What the nature of this transformation is, and how or on what grounds we may speak of the same form, now as content now as in function, is not indicated.

Grebe wishes to maintain a belief in a material a priori, without abandoning his doctrine that an element of uncertainty is constitutive of knowledge. His solution of this difficulty is that a priori knowledge deals with essential relations, not with existential ones, and that it is always directed upon the meaning of subject-matter,

not upon a logically formless one as is the case in a posteriori knowledge (sic!) (p. 98). Although he refers to Schlick approvingly in support of his main thesis, he yet commits himself to both immediate and mediate knowledge. Grebe apparently does not see, as does Schlick, that it is confusion to classify as knowledge both the psychological immediacy of non-cognitively possessed subject-matter, and the symbolic or inferential activity which is the essence of knowledge. Grebe is thus compelled, in consonance with his rejection of experimental activity as constitutive of knowledge, to base all mediate upon immediate knowledge, because an endless regress is (falsely) supposed to attend the denial of this proposition.

ERNEST NAGEL

NEW YORK CITY.

#### JOURNALS AND NEW BOOKS

ERKENNTNIS. Band I, Heft 1. (Zugleich Annalen der Philosophie, Band IX, Heft 1). Die Wende der Philosophie: Moritz Schlick. Die alte und die neue Logik: Rudolf Carnap. Über den sogenannten Gegenstand der Mathematik: Walter Dubislav. Die Philosophische Bedeutung der modernen Physik: Hans Reichenbach. (Heft 2) Bericht über die 1 Tagung für Erkenntnislehre der exakten Wissenschaften, Prag, 1929. Eröffnungsansprache: Philipp Frank. Die Bedeutung der wissenschaftlichen Weltauffassung, insbesondere für Mathematik und Physik: Hans Hahn. Wege der wissenschaftlichen Weltauffassung: Otto Neurath. Was bedeuten die gegenwärtigen physikalischen Theorien für die allgemeine Erkenntnislehre? Philipp Frank. Kausalität und Wahrscheinlichkeit: Hans Reichenbach. Über kausale und statistische Gesetzmässigkeit in der Physik: Richard v. Mises. Über den Kausalbegriff im Makroskopischen, besonders in der klassischen Physik: Paul Hertz. Logische Analyse des Wahrscheinlichkeitsbegriffs: Friedrich Waismann. Wahrscheinlichkeit und Erfahrung: Herbert Feigl. Diskussion über Wahrscheinlichkeit. Die heutigen Gegensätze in der Grundlegung der Mathematik: Adolf Fraenkel. Bericht über Untersuchungen zur allgemeinen Axiomatik: Rudolf Carnap. Diskussion über Grundfragen der Mathematik und Logik. Historische Anmerkungen: Otto Neurath.

Proceedings of the Aristotelian Society, Vol. XXX. (1929-1930) London: Harrison & Sons, Ltd. 1930. 322 pp. 25 s.

Aron, Marguerite: Un Animateur de la Jeunesse au XIII siècle. Vie, Voyages du Bx Jourdain de Saxe, Maître-ès-Arts à Paris et Général des Frères Prêcheurs de 1222 à 1237. (Temps et Visages) Introduction par R. P. Mandonnet. Paris: Desclée de Brouwer et Cie. 1930. 396 pp. 20 frs.

Höfler, Alois: Psychologie. Herausgegeben und mit anmerkungen versehen von Aloys Wenzl. Band I. Zweite, sehr vermehrte auflage. Wein-Leipzig: Hölder-Pichler-Tempsky A. G. 1930. xv + 642 pp. 36 R.M.

Oldekop, Ewald: Über das hierarchische Prinzip in der Natur und seine Beziehungen zum Mechanismus-Vitalismus-Problem. Reval: F. Wassermann. 1930. 64 pp.

Rivier, W.: L'Empirisme dans le Sciences Exactes. (Archives de la Société Belge de Philosophie, 2º Année Fasc. 1.) Bruxelles: J. Perebooms. 1930. 13 pp. 2 fr.

Siwek, Paul: La Psychophysique Humaine d'après Aristote. (Collection Historique des Grand Philosophes). Paris: Félix Alcan. 1930. vii + 207 pp. 30 fr.

Wallis, Wilson D.: Culture and Progress. New York: McGraw-Hill Book Co. 1930. xii + 503 pp. \$5.00.

#### NOTES AND NEWS

The ninth volume of the Annalen der Philosophie has appeared under a new title and board of editors. The new series is called Erkenntnis and is edited by Rudolf Carnap and Hans Reichenbach.

From the editor's introduction to the new series we quote:

"The Gesellschaft für empirische Philosophie (Berlin) is now affiliated with the Verein Ernst Mach (Wien)... Since we believe the goal of philosophy to be knowledge, knowledge in the same sense as in any other science, we have chosen the word as the mark of or new periodical. Our periodical does not seek doctrines, nor complete systems, nor conceptual novelties; it seeks knowledge."

Erkenntnis is published by Felix Meiner, Leipzig, and appears about six times a year. The subscription price is 20 R.M. Communications and manuscripts should be addressed to Prof. Dr. H. Reichenbach, Berlin—Zehlendorf, Schützallee 45.

No. 2 of *Erkenntnis* contains the report of the proceedings of the first *Tagung für Erkenntnislehre der exakten Wissenschaften* at Prague, 1929. The contents of this number as well as of the first, are listed above under "Journals and New Books."

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Volume XXVII. No. 20. September 25, 1930.

An Analysis of the Experience of Time. V. J. McGill.
An Alleged Escape from the Paradox of Judgment. J. Loewenberg.
Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 21. October 9, 1930.

The Place of Definition in Religious Experience.

EDWIN EWART AUBREY.

The Relativity of Inertial Mass. F. P. Hoskyn.

Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 22. October 23, 1930.

The Seventh International Congress of Philosophy.

Brand Blanshard.

Book Reviews. Journals and New Books. Notes and News.

Volume XXVII. No. 23. November 6, 1930.

The Dialectical Argument against Absolute Simultaneity. I.
ARTHUR Ö. LOVEJOY.

How "Propositions" Mean. F. C. S. Schiller. In Defence of an Impression. Sidney Hook.

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Volume XXVII. No. 24. November 20, 1930.

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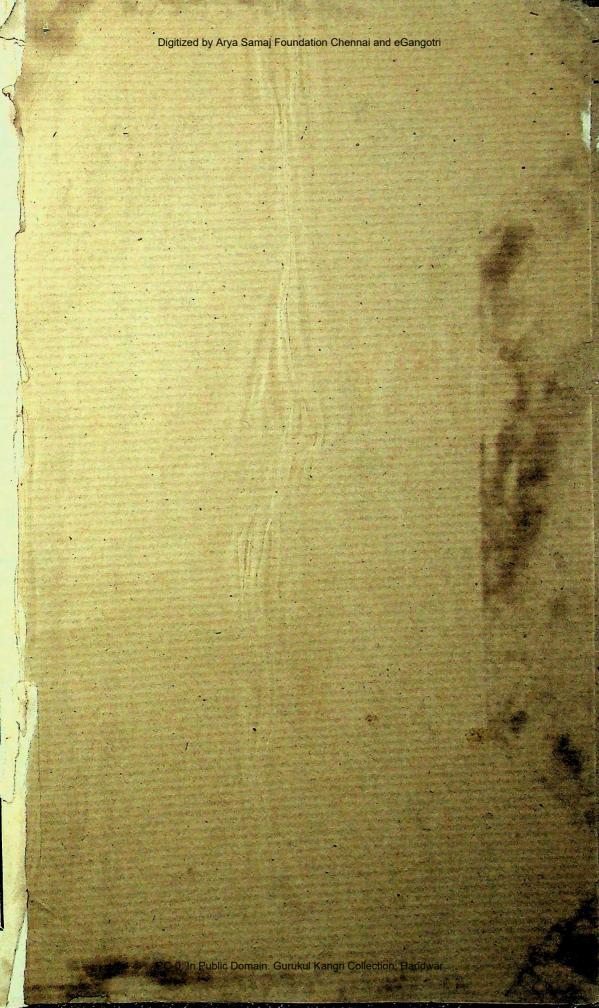
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